STIC Scientific and Technical Information Center

Search Report EIC 3600

STIC Database Tracking Number: 321[illegible]

To: Mark Fleischer	From: Heidi Myers
Location: KNX 5B16	Location: EIC3600, KNX 4A70
Art Unit: 3624	Phone: (571) 272-2446
Date: 02/03/2010	heidi.myers@uspto.gov
Case Serial Number: 10/664842	

Search Notes

10/664842 Full Template Searc
ACCEPTING BIDS UNDER UNCERTAIN FUTURE DEMANDS

Dear Examiner Fleischer:

Please find attached the results of your search for the above-referenced case. The search was conducted in the Business Methods Template files in Dialog.

I have listed *potential* references of interest in the first part of the search results. However, please be sure to scan through the entire report. There may be additional references that you might find useful.

If you have any questions about the search, or need a refocus, please do not hesitate to contact me.

Thank you for using the EIC, and we look forward to your next search!

****EIC-Searcher identified "potential references of interest" are selected based upon their apparent relevance to the terms/concepts provided in the examiner's search request.***

I. Potential References of Interest

29/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0016944704 - Drawing available
WPI ACC NO: 2007-659769/200762
XRPX Acc No: N2007-515658
Spot market-based inventory planning method for e.g. auto manufacturer, involves computing and generating optimal safety stock level record for product to cover uncertainty in demand
Patent Assignee: HEWLETT-PACKARD DEV CO LP (HEWP)
Inventor: CALLIONI G; KAKOUROS S; NEALE J J
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 7249068	B1	20070724	US 2000608057	A	20000630	200762 B

Priority Applications (no., kind, date): US 2000608057 A 20000630

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 7249068	B1	EN	18	13	

Alerting Abstract US B1

NOVELTY - The method involves computing and generating an optimal safety stock level record for a product to cover uncertainty in demand over an exposure period with the desired service level. A maximum safety stock level of the product is determined to cover the uncertainty in demand over the period with the product being supplied solely from non-spot market sources. A web site providing information relating to spot market sources is navigated, and a stochastic simulation of random variables is performed. The maximum safety stock level is measured based upon a measure of demand for the product.

USE - Used for planning a spot market-based inventory by utilizing a server computer over a network e.g. local area network, wide area network, and Internet, when supply is available from a spot market, for large manufacturing enterprises such as computer manufacturer, electronics manufacturer and auto manufacturer.

ADVANTAGE - The method enables an asset manager to cover uncertainty in future end customer demand with the safety stock level that is less than the safety stock level required to cover expected demand with the desired service level when supply is available only from non-spot market sources, thus reducing overall product costs of spot market.

DESCRIPTION OF DRAWINGS - The drawing shows a block representation of a distribution network.

10 Distribution system

Title Terms/Index Terms/Additional Words: SPOT; MARKET; BASED; INVENTORY; PLAN; METHOD; AUTO; MANUFACTURE; COMPUTATION; GENERATE; OPTIMUM; SAFETY; STOCK; LEVEL; RECORD; PRODUCT; COVER; UNCERTAINTY; DEMAND

Class Codes
International Classification (+ Attributes)

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IPC + Level Value Position Status Version
  G06G-0001/00  A  I  F  B  20060101
  G06G-0001/00  C  I     B  20060101
US Classification, Issued: 70528, 70526
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2D; T01-J15H; T01-N01A2E; T01-N02A2B;  T01-N03A1


31/3,K/27     (Item 27 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2010 WIPO/Thomson. All rts. reserv.
00542296    **Image available**
COMPUTER-IMPLEMENTED  VALUE  MANAGEMENT  TOOL  FOR  AN  ASSET  INTENSIVE
    MANUFACTURER
OUTIL  DE GESTION DE VALEURS INFORMATISE POUR FABRICANT DE PRODUITS A FORTE
    CONCENTRATION D'ACTIFS
Patent Applicant/Assignee:
  I2 TECHNOLOGIES INC,
  KALYAN Vibhu K,
Inventor(s):
  KALYAN Vibhu K,
Patent and Priority Information (Country, Number, Date):
  Patent:               WO 200005669 A1 20000203 (WO 0005669)
  Application:          WO 99US16454 19990722  (PCT/WO US9916454)
  Priority Application: US 9893709 19980722
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CU CZ CZ DE DE DK DK EE EE
  ES FI FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS
  LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM
  TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ
  MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ
  CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 4020
Main International Patent Class (v7): G06F-017/60
Fulltext Availability:
  Detailed Description

Detailed Description
...  limited by  insufficient machine capacity rather than by other
  constraints.

  Value management for asset intensive manufacturing is
  based on the following principle: Based on future
  uncertain demand for various products, expected
  prices for  those products, and available capacities of resources
  during periods required to supply demand when demanded, a
  value for each resource during those periods can be
  calculated. The calculation results in threshold prices,
  referred to as minimum acceptable values (MAVs) for a given  demand period....
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35/5/2 (Item 2 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01855513 ORDER NO: AADAA-I3028533
Topics in inventory control and management
Author: Hu, Haichao
Degree: Ph.D.
Year: 2001
Corporate Source/Institution: Columbia University (0054)
Adviser: Guillermo Gallego
Source: VOLUME 62/10-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 4717. 125 PAGES
Descriptors: ENGINEERING, INDUSTRIAL ; OPERATIONS RESEARCH
Descriptor Codes: 0546; 0796
ISBN: 0-493-40619-0

The focus of this thesis is on two fundamental issues in inventory management and control, when to place an order and how much to order. Decisions involving these two issues become complicated when demand is uncertain, and the need to trade off various costs is considered. We study three topics in detail and focus on the structural results, in particular on the structures of optimal policies.

First, we consider a periodic review, single product, single location, finite horizon stochastic inventory model with lost sales and zero lead times. At the beginning of each period the inventory manager decides how many units to purchase at a fixed plus variable ordering cost. During the period, the inventory manager has the discretion of rejecting demands even if there is sufficient on-hand inventory. This allows him/her to keep inventory for future periods. At the end of each period, the inventory manager has the option of placing emergency orders, at a fixed plus variable cost, to satisfy shortages at the end of each period. The objective is to maximize the expected profit which is equal to the expected revenue from sales minus the expected holding and ordering costs. Under mild conditions on the cost structure, we show that (<italic>s, S</italic>) policies remain optimal in this setting. In addition, we show that a base-stock policy is optimal when both the regular and the emergency setup costs are zero. We also show that emergency orders are never placed if the emergency variable cost is higher than the selling price, and that emergency orders are placed only when the number of units short exceeds a threshold level. Extensive numerical studies are conducted to gain managerial insights and to learn how the optimal policy and the value function behave as the planning horizon grows.

In studying stochastic dynamic programming models, very often one important and interesting topic is the infinite horizon problem. We study the discretionary sale and emergency order infinite horizon problem under both discounted and average cost criteria. Our objective is same as that of the finite horizon problem, i.e., to maximize the total expected profit which is equal to the expected revenue from sales minus the expected holding and ordering costs under both discounted cost criterion and average cost criterion. We prove that the (<italic>s, S</italic>) policies are optimal for both criteria. In addition, we show that a myopic policy is optimal when both the regular and the emergency setup costs are zero under the discounted cost criterion.

Our third topic is a production/inventory problem with finite capacity. In many production/inventory systems, not only is the production/inventory capacity finite, but the systems are also subject to

random production yields that are influenced by factors such as breakdowns, repairs, maintenance, learning, and the introduction of new technologies. The influence of these factors on random yields can be effectively modeled by a Markov chain driven process. We study a single-item, single-location, periodic-review model with finite capacity and Markov modulated demand and supply processes. When demand and supply processes are driven by two independent, discrete-time, finite-state, time-homogeneous Markov chains, we show that a modified, state-dependent, inflated base-stock policy is optimal for both the finite and infinite horizon planning problems. We also show that the finite-horizon solution converges to the infinite-horizon solution.

35/5/4 (Item 4 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01658078 ORDER NO: AAD98-40525
PRICING AND CAPACITY DECISIONS UNDER DEMAND UNCERTAINTY
Author: DROGOSZ, JOHN DENIS FRANK
Degree: PH.D.
Year: 1998
Corporate Source/Institution: THE UNIVERSITY OF MICHIGAN (0127)
Co-chairs: JOHN R. BIRGE; IZAK DUENYAS
Source: VOLUME 59/07-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 3633. 104 PAGES
Descriptors: ENGINEERING, INDUSTRIAL ; ENGINEERING, SYSTEM SCIENCE ; BUSINESS ADMINISTRATION, MANAGEMENT
Descriptor Codes: 0546; 0790; 0454

Consider a firm that has the flexibility to produce two substitutable products and must determine optimal capacity levels and prices for these products for a single-period problem. In the first case, the firm is a price taker but can determine optimal capacity levels for both products. For the second case, the firm can set the price for one product and the optimal capacity level for the other product. In the third case the capacity for both products is assumed to be fixed and the optimal pricing policy for both products is discussed. For each of these cases, the sensitivity of optimal prices and/or capacities to the problem parameters are presented for the case where both products' demands are uniformly distributed. Finally, the situation where each product is managed by a different manager trying to maximize individual product profits are analyzed. The individual optimal price and capacity decisions are then compared to the cases where the decisions are made simultaneously.

Secondly, the case where a firm that is able to simultaneously set the price and capacity level of a single product in each period is considered. The demand for the product is uncertain but its mean demand is dependent on the price level that is set which in turn affects the capacity decision. The optimal pricing and capacity policy in the case where the functions to buy and sell capacity are linear is presented. A sensitivity analysis of the optimal policy to changes in the parameters of the model is presented for the case where the product's demand is uniformly distributed. The effects of deterministic and stochastic lead times on the optimal policy are also presented. In addition, the situation where there is a possibility of a change in technology that reduces the cost of buying capacity in the future is

discussed in terms of its effect on the optimal pricing and capacity strategy. Numerical examples of various optimal pricing and capacity decisions are presented for the case when the cost functions are non-linear.

Thirdly, optimal pricing and capacity decisions are presented for the case where there are fixed costs associated with buying and selling capacity. Sensitivity of the optimal policy to changes in the parameters of the model are also presented.

Finally, optimal capacity decisions are discussed when the future selling price or the production costs are uncertain.

35/5/27 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

08794723
Title: Two-stage simulation optimization for agile manufacturing capacity planning
Author(s): Uribe, A.M.; Cochran, J.K.; Shunk, D.L.
Author Affiliation: Ind. & Syst. Eng. Dept., ITESM, Mexico City, Mexico
Journal: International Journal of Production Research, vol.41, no.6, pp. 1181-97
Publisher: Taylor & Francis
Country of Publication: UK
Publication Date: 15 April 2003
ISSN: 0020-7543
SICI: 0020-7543(20030415)41:6L.1181:SSOA;1-X
CODEN: IJPRB8
Item Identifier (DOI): http://dx.doi.org/10.1080/00207540210163928
Language: English
Document Type: Journal Paper (JP)
Treatment: Practical (P); Theoretical or Mathematical (T)
Abstract: Capacity planning involves the selection of manufacturing technologies and the allocation of budget to specific equipment acquisitions. In today's highly volatile manufacturing world, an agile capacity-planning tool is required. This tool must provide the mechanism for a company to thrive in an environment of uncertainty. Uncertain future demands make capacity planning and technology selection difficult tasks, whether they are caused by variations in forecasts of direct demand or by upstream variability in a supply chain. In this paper, a practical modelling technique for minimizing the required investment in capacity planning for discrete manufacturing sites under an uncertain demand stream is presented. The method consists of a two-stage stochastic integer program. The first stage characterizes the optimal response of the system under uncertainty. The second stage selects a tool set based on the characterization from the first stage, with the addition of budget constraints. The model is scalable, allowing for multiple products, multiple operations, multiple flow paths including re-entrant flow, and multiple tool types. A simple example is introduced to explain the methodology, followed by the results of a large-scale real-world application in the semiconductor industry (21 refs.)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: agile manufacturing; capacity planning (manufacturing);

integer programming; minimisation; stochastic programming; supply chain management
Identifiers: two-stage simulation optimization; agile manufacturing capacity planning; discrete manufacturing sites; uncertain demand stream; two-stage stochastic integer program; technology selection; multiple products; multiple operations; multiple flow paths; reentrant flow; multiple tool types; semiconductor industry
Classification Codes: B0170 (Project and production engineering); B0260 (Optimisation techniques); B0140B (Planning); C1290F (Systems theory applications in industry); C1180 (Optimisation techniques); E1010 (Production management); E0210G (Optimisation); E1510 (Manufacturing systems)
INSPEC Update Issue: 2003-047
Copyright: 2003, IEE

35/5/33 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2010 The Thomson Corp. All rts. reserv.
10750410 Genuine Article#: 563RW Number of References: 23
Title: Inventory models with random yield in a random environment
Author: Erdem AS (REPRINT) ; Ozekici S
Corporate Source: Bogazici Univ,Dept Management Informat Syst,TR-80815 Bebek//Turkey/ (REPRINT); Bogazici Univ,Dept Management Informat Syst,TR-80815 Bebek//Turkey/; Bogazici Univ,Dept Ind Engn,TR-80815 Bebek//Turkey/
Journal: INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS, 2002, V78, N3,SI (AUG 11), P239-253
ISSN: 0925-5273 Publication Date: 20020811
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE
Geographic Location: Turkey
Journal Subject Category: ENGINEERING, MULTIDISCIPLINARY; ENGINEERING, MANUFACTURING
Abstract: We consider a single item inventory model which is observed periodically in a randomly changing environment. All model parameters are specified by the state of the environment which is assumed to be a time-homogeneous Markov chain. Yield is random due to the random capacity of the vendor, i.e., a given order is fully received if the order quantity is less than this capacity. Otherwise, the quantity received is equal to the available capacity. The problem is analyzed in single, multiple and infinite periods and it is shown that in all cases, the optimal policy is the well-known base-stock policy where the optimal order-up-to level depends on the state of the environment. The results are compared with the solutions of the certain yield model when there is infinite capacity. We show that the order-up-to levels are equal in the single period case. However, in multiple and infinite periods, we order the same or more if the yield is random. (C) 2002 Elsevier Science B.V. All rights reserved.
Descriptors: SCI Author Keywords: random yield ; random capacity ; random environment ; base-stock
Identifiers: KeyWord Plus(R): SUPPLY UNCERTAINTY; CAPACITY; POLICIES; DEMAND; DIVERSIFICATION

Cited References:
ANUPINDI R, 1993, V39, P944, MANAGE SCI
ARROW KJ, 1951, V19, P250, ECONOMETRICA
BERTSEKAS DP, 1997, DYNAMIC PROGRAMMING
CIARALLO FW, 1994, V40, P320, MANAGE SCI
ERDEM A, 2000, SINGLE PERIOD INVENT
ERDEM A, 2000, EOQ MODELS MULTIPLE
ERDEM A, 1999, THESIS BOGAZICI U
FELDMAN R, 1978, V15, P654, J APPL PROBABILITY
GURLER U, 1997, V45, P904, OPER RES
HENIG M, 1990, V38, P634, OPER RES
IGLEHART D, 1962, P127, STUDIES APPL PROBABI
KALYMON B, 1971, V19, P1434, OPER RES
KARLIN S, 1958, P109, STUDIES MATH THEORY
LEE HL, 1988, V36, P269, OPER RES
OZEKICI S, 1999, V91, P123, ANN OPER RES
PARLAR M, 1993, V66, P52, EUR J OPER RES
PARLAR M, 1991, V38, P107, NAV RES LOG
SHIH W, 1980, V18, P677, INT J PROD RES
SILVER EA, 1976, V14, P32, INFOR
SONG JS, 1993, V41, P351, OPER RES
WANG YZ, 1996, V42, P130, MANAGE SCI
WANG YZ, 1996, V45, P381, INT J PROD ECON
YANO CA, 1995, V43, P311, OPER RES

32/3,K/19 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01851206 05-02198
Combined pricing and inventory control under uncertainty
Federgruen, Awi; Heching, Aliza
Operations Research v47n3 PP: 454-475 May/Jun 1999
ISSN: 0030-364X JRNL CODE: OPR

ABSTRACT: The simultaneous determination of pricing and inventory replenishment strategies in the face of demand uncertainty is addressed. The following single item, periodic review model is analyzed. Demand in consecutive periods are independent, but their distributions depend on the item's price in accordance with general stochastic demand functions. The price charged in any given period can be specified dynamically as a function of the state of the system. A replenishment order may be placed at the beginning of some or all of the periods. Stockouts are fully backlogged. Both finite and infinite horizon models are addressed, with the objective of maximizing total expected discounted profit or its time average value, assuming that prices can either be adjusted arbitrarily or that they can only be decreased. The structure of an optimal combined pricing and inventory strategy for all of the above types is characterized. An efficient value iteration method is developed to compute these optimal strategies.

II. Inventor Search Results from Dialog

Patent Files

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37/5/1     (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0019397958  - Drawing available
WPI ACC NO: 2009-M61147/200956
Workforce optimizing system for use in e.g. banking, has workforce
optimization unit identifying and allocating relevant resources for
executing business plan, where unit intimates identified resource with plan
to execute business scheme
Patent Assignee: INT BUSINESS MACHINES CORP  (IBMC)
Inventor: JAIN P; PARIJA G R; SARONWALA A; TANDON A
Patent Family (1 patents,  1 countries)
Patent                        Application
Number          Kind   Date    Number          Kind   Date    Update
US 20090204461   A1  20090813  US 200830283     A  20080213  200956  B

Priority Applications (no., kind, date): US 200830283   A  20080213

Patent Details
Number         Kind  Lan   Pg  Dwg  Filing Notes
US 20090204461   A1  EN    11    3

  Alerting Abstract US A1
  NOVELTY - The system (100) has a workforce optimization unit for
receiving an input business planning parameter relevant to a business
scheme. The workforce optimization unit develops a business
plan to execute the business scheme based on the business planning
parameters. The workforce optimization unit identifies and allocates the
relevant resources for executing the business plan. The workforce
optimization unit intimates an identified resource with the plan to
execute the business scheme, where the unit computes a probability
distribution of optimal human resource for the business plan.
  DESCRIPTION - An INDEPENDENT CLAIM is also included for a computer
program product having a set of instructions for performing a method for
optimizing workforce in service oriented industry.
  USE - System for optimizing workforce in a service oriented industry e.g.
banking, financial transaction institution and insurance company that are
utilized for a service professional. Uses include but are not limited to
service engineer, help desk, call center agent, insurance assessor, and
business consultant.
  ADVANTAGE - The system utilizes an enterprise-level modeling to produce
robust optimal hiring, deployment and redeployment decisions in a face of
uncertainty in less time and in an inexpensive manner. The system improves
the determination and allocation of resource to the service in the service
oriented industry.
  DESCRIPTION OF DRAWINGS - The drawing shows a schematic block diagram of
a system for workforce optimization.
   100 Workforce optimizing system
   110 User
   120 User interface
   130 Central repository
```

140 Analysis tool

Title Terms/Index Terms/Additional Words: OPTIMUM; SYSTEM; BANK; UNIT; IDENTIFY; ALLOCATE; RELEVANT; RESOURCE; EXECUTE; BUSINESS; PLAN; SCHEME

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0010/00 A I F B 20060101
G06Q-0010/00 C I B 20060101
US Classification, Current Main: 705-008000; Secondary: 705-007000
US Classification, Issued: 7058, 7057
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-H05B2; T01-J05A1; T01-J05A2B; T01-J05A2C; T01-S03

37/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0019397951 - Drawing available
WPI ACC NO: 2009-M61140/200956
Workforce optimization method for service oriented industry e.g. insurance institution, involves allocating identified resources to business plan, and intimating identified resources with plan to execute business scheme
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: JAIN P; PARIJA G R; SARONWALA A; TANDON A
Patent Family (1 patents, 1 countries)
Patent Application
Number Kind Date Number Kind Date Update
US 20090204460 A1 20090813 US 200830263 A 20080213 200956 B

Priority Applications (no., kind, date): US 200830263 A 20080213

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 20090204460 A1 EN 10 3

Alerting Abstract US A1
NOVELTY - The method involves receiving business planning parameters e.g. workload scenario list, relevant to a business scheme as an input to plan the business scheme. A business plan is developed for executing the business scheme based on the business planning parameters. Relevant resources e.g. human resource, are identified for executing the business plan, and the identified resources are allocated to the business plan. The identified resources are intimated with the plan to execute the business scheme.
USE - Method for workforce optimization in a service oriented industry e.g. financial institution such as bank, and insurance institution, by allocating resource e.g. human resource such as field service engineer, help desk or call center agent, insurance assessor and business consultant, vehicle, tool, equipment, spare part, or office space (all claimed) such as meeting room, to the business scheme by using an information handling device e.g. desktop computer, application server, web server, and database server. Can also be used for mobile phone, laptop computer, personal digital assistant (PDA), and network of connected computers.
ADVANTAGE - The method solves problems related to strategic planning for skilled resources for managing corporate banking processes, automatically

without any human intervention, by using computer-implemented stochastic optimization modeling. The method allows a user to analyze complex process tasks management scenarios in a rapid manner by using stochastic optimization modeling tools, with fewer computational resources to provide optimal strategic resource planning and tactical resource transition decisions. The method allows the user to formulate the problem of analyzing complex process tasks under different probable future scenarios as a multi-stage stochastic optimization model, thus solving the problem by using standard mathematical programming solvers, and hence maximizing profit/revenue of a service oriented industry.
DESCRIPTION OF DRAWINGS - The drawing shows a block diagram of architecture for workforce optimization.
100 Workforce optimization architecture
110 User
120 User interface
130 Central repository
140 Analysis tool

Title Terms/Index Terms/Additional Words: OPTIMUM; METHOD; SERVICE; ORIENT; INDUSTRIAL; INSURANCE; INSTITUTION; ALLOCATE; IDENTIFY; RESOURCE; BUSINESS; PLAN; EXECUTE; SCHEME

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0010/00 A I F B 20060101
G06Q-0010/00 C I B 20060101
US Classification, Current Main: 705-008000; Secondary: 705-007000
US Classification, Issued: 7058, 7057
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05B4P; T01-J07D1; T01-N01A2E; T01-N02A3C

37/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0018104578 - Drawing available
WPI ACC NO: 2008-K24905/200861
Related WPI Acc No: 2005-423823
XRPX Acc No: N2008-745683
Stochastic integer programming based constrained optimization method for allocation of e.g. education and training instructor to requested class, involves generating revenue/profit optimization model under planning scenarios
Patent Assignee: DAVIDSON D J (DAVI-I); PARIJA G R (PARI-I); SHARMA S (SHAR-I)
Inventor: DAVIDSON D J; PARIJA G R; SHARMA S
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20080208664	A1	20080828	US 2003714620	A	20031118	200861 B
			US 2008114885	A	20080505	

Priority Applications (no., kind, date): US 2003714620 A 20031118; US 2008114885 A 20080505

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 20080208664 A1 EN 11 5 Continuation of application US 2003714620

Alerting Abstract US A1
NOVELTY - The method involves inputting a list of classes, cancellation probabilities and available classrooms and education and training instructors. Operational revenue/profit is analyzed under different planning scenarios involving chaining of multiple classes, prerequisite relationships and inter-class spacing requirements. A revenue/profit optimization model of the overall operational revenue/profit is generated under the different planning scenarios. A stochastic program of the revenue/profit optimization model is solved by solving a deterministic equivalent.
DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for implementing stochastic integer programming based constrained optimization for allocation of classrooms and instructors to requested classes associated with cancellation probabilities.
USE - Stochastic integer programming based constrained optimization method for allocation of a classroom and an education and training instructor to a requested class associated with cancellation probability in an educational institution.
ADVANTAGE - The method enables optimal allocation of the classrooms and the education and training instructors to the requested classes associated with cancellation probabilities.
DESCRIPTION OF DRAWINGS - The drawing shows a block representation of system architecture of a scheduling system.
10 Training administration database system
11 Data processing system
13 Data processor
15 Data postprocessor
16 Automatic block scheduling legacy application

Title Terms/Index Terms/Additional Words: STOCHASTIC; INTEGER; PROGRAM; BASED; CONSTRAIN; OPTIMUM; METHOD; ALLOCATE; EDUCATION; TRAINING; INSTRUCTION; REQUEST; CLASS; GENERATE; REVENUE; PROFIT; MODEL; PLAN

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06F-0017/50 A I F B 20060101
G09B-0019/00 A I R 20060101
G06F-0017/50 C I F B 20060101
G09B-0019/00 C I R 20060101
US Classification, Current Main: 705-007000
US Classification, Issued: 7057
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05B4P; T01-J15X; T01-J30A

37/5/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0017996682 - Drawing available
WPI ACC NO: 2008-J17001/200852

Related WPI Acc No: 2006-556718
XRPX Acc No: N2008-656685
Computer-implemented, stochastic-integer-programming-based constrained optimization method for developing strategic budget, involves producing distribution of function values as output in machine-readable data format
Patent Assignee: KUMAR T (KUMA-I); PARIJA G R (PARI-I); XI H (XIHH-I)
Inventor: KUMAR T; PARIJA G R; XI H
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20080178178	A1	20080724	US 200535931	A	20050114	200852 B
			US 200858098	A	20080328	

Priority Applications (no., kind, date): US 200535931 A 20050114; US 200858098 A 20080328

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20080178178	A1	EN	8	2	Continuation of application US 200535931

Alerting Abstract US A1
NOVELTY - The method involves providing a list of fire scenarios with unique identifications (IDs) for fire planning units in a machine-readable data format. A list of fire-groups with the unique IDs is provided for the fire planning units in the machine-readable data format. A list of fire events with the unique IDs is provided in fire management unit locations. A list of fire-management resources is provided in the machine-readable data format. Distribution of optimal utility function values is produced as an output in the machine-readable data format.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.a system for developing a strategic budget, comprising a providing unit
2.a computer-implemented method for predicting or optimizing a budget.

USE - Computer-implemented, stochastic-integer-programming-based constrained optimization method for developing a strategic budget to allocate a disaster management resource to a disaster event e.g. wildfire event.
ADVANTAGE - The method enables development of the effective strategic budget to efficiently allocate the disaster management resource to the disaster event.
DESCRIPTION OF DRAWINGS - The drawing shows a schematic view representing scenarios comprised of fire groups.

Title Terms/Index Terms/Additional Words: COMPUTER; IMPLEMENT; STOCHASTIC; INTEGER; PROGRAM; BASED; CONSTRAIN; OPTIMUM; METHOD; DEVELOP; STRATEGY; BUDGET; PRODUCE; DISTRIBUTE; FUNCTION; VALUE; OUTPUT; MACHINE; READ; DATA; FORMAT

Class Codes
International Classification (+ Attributes)

IPC + Level	Value	Position	Status	Version
G06F-0009/46	A	I	F	B 20060101
G06F-0009/46	C	I	F	B 20060101

ECLA: G06Q-010/00C
US Classification, Current Main: 718-100000

US Classification, Issued: 718100
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-F04; T01-F05; T01-S03

37/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0016025088 - Drawing available
WPI ACC NO: 2006-556718/200657
Related WPI Acc No: 2008-J17001
XRPX Acc No: N2006-446594
Strategic budge development method for allocation of disaster management resources to disaster events, involves producing fire list with identification, contained status, containment time period, deployed resources
Patent Assignee: KUMAR T (KUMA-I); PARIJA G R (PARI-I); XI H (XIHH-I)
Inventor: KUMAR T; PARIJA G R; XI H
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20060161467	A1	20060720	US 200535931	A	20050114	200657 B

Priority Applications (no., kind, date): US 200535931 A 20050114

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20060161467	A1	EN	8	2	

Alerting Abstract US A1

NOVELTY - The list of fire scenarios, fire-groups, fire events with weights, fire-management resources by kind, category and type, fire-management resources by station location, fire-management resources by resource dependencies are provided in machine readable data format independently. The list of fire-management resources with cumulative line production quantity, and stations with capacities and expansion penalties are provided.

DESCRIPTION - The data processing is employed to analyze strategic utility and benefit under different planning scenarios involving user-selection of stations, capacities and resources. The data processing is employed to generate a utility or benefit optimization model of overall strategic utility or benefit under different planning scenarios. The data processing is employed to solve stochastic integer program of utility or benefit optimization model by solving its deterministic equivalent using two-phase optimization approach. A list of fires with their identification (ID), contained or escaped status, containment time period, deployed resources and expected utility are produced. A list of deployed resources by kind, category, type and station location is produced. A distribution of the optimal utility function values, weighted acres managed are produced by each scenario. INDEPENDENT CLAIMS are also included for the following:

1. system employing stochastic integer programming based constrained optimization technology for developing strategic budget for allocation of disaster management resources; and
2. method for predicting or optimizing budget needed for allocation of disaster management resources to disaster events.

USE - For stochastic optimization modeling with strategic budgeting initial responses for managing wildfires.
ADVANTAGE - The development of robust optimization engine for analyzing complex fire management scenarios is performed very quickly with fewer computational resources in order to provide optimal strategic budgeting decisions.
DESCRIPTION OF DRAWINGS - The figure shows the two-stage stochastic integer programming modeling for solving budgeting problem.

Title Terms/Index Terms/Additional Words: STRATEGY; DEVELOP; METHOD; ALLOCATE; DISASTER; MANAGEMENT; RESOURCE; EVENT; PRODUCE; FIRE; LIST; IDENTIFY; CONTAIN; STATUS; TIME; PERIOD; DEPLOY

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06F~0009/46 A I F B 20060101
G06F~0009/46 C I L B 20060101
ECLA: G06Q-010/00C
US Classification, Current Main: 705-008000
US Classification, Issued: 7058
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J04A; T01-J05A2B

37/5/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0015794774 - Drawing available
WPI ACC NO: 2006-351144/200636
XRAM Acc No: C2006-114931
XRPX Acc No: N2006-298009
Production design and operations for steel plate design by implementing column framework for varying size plate design of master problem to choose from candidate mother-plate patterns and sub-problem to give good candidate patterns
Patent Assignee: DASH S (DASH-I); KALAGNANAM J R (KALA-I); REDDY C K (REDD-I); INT BUSINESS MACHINES CORP (IBMC)
Inventor: DASH S; KALAGNANAM J R; REDDY C K
Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 20060100727	A1	20060511	US 2004981588	A	20041105	200636	B
US 7277768	B2	20071002	US 2004981588	A	20041105	200765	E

Priority Applications (no., kind, date): US 2004981588 A 20041105

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20060100727	A1	EN	28	20	

Alerting Abstract US A1
NOVELTY - Design and operations scheduling for steel plate design are produced by implementing a column generation framework for varying size plate design of a master problem to choose from candidate mother-plate patterns and sub-problem to give good candidate patterns.
DESCRIPTION - Production design and operations scheduling for steel plate

design involves implementing a column generation framework for varying size plate design of a master problem to choose from candidate mother-plate patterns and a sub-problem to give good candidate patterns; using an interval graph to represent candidate slabs and enumerating maximal cliques to get cast-templates; implementing a column generation framework for material allocation consisting of a master problem to choose from candidate mother-plate patterns for existing slabs and a sub-problem to give good candidate patterns; and integrated cast-template design and plate/slab design where a column generation framework for plate design uses a master linear program to design plates and subsequently slabs for the cast-template design process, and the cast-template design process gives redesign information to the plate/slab design process. INDEPENDENT CLAIMS are also included for:

1. an automated method to optimally design plates to satisfy an order book at a steel plant and specify a sequence of operations required to create the designed plates, given various constraints on machines and manufacturing parameters comprising implementing a column generation framework for mother-plate design to create a list of mother-plates that need to be produced, where a mother-plate design problem is decomposed into a master problem and a sub-problem, and the master problem is used to evaluate packing patterns that should be used to fulfill an order book and the sub-problem generating potential one-dimensional and two-dimensional feasible packing patterns as candidates to be evaluated by the master problem; transforming mother-plates into an interval graph representing the candidate slabs to be cast which is subsequently solved for maximal subsets to generate candidate casts; and allocating material using a column generation framework very similar to the one in the mother-plate design component to allocate order plates to mother-plates and slabs already in inventory; and
2. a computer readable medium containing an executable computer program for an automated method to optimally design plates to satisfy an order book at a steel plant and specify a sequence of operations required to create the designed plates, given various constraints on machines and manufacturing parameters.

USE - For producing design and operations scheduling for steel plate design.

ADVANTAGE - Optimally designs plates to satisfy an order book at a steel plant to maximize the yield of the plates designed while using capacity fully to reduce the production of surplus slabs or plates, and satisfy order deadlines

DESCRIPTION OF DRAWINGS - The figure shows a block diagram showing the production design process of heavy plate.

Title Terms/Index Terms/Additional Words: PRODUCE; DESIGN; OPERATE; STEEL; PLATE; IMPLEMENT; COLUMN; FRAMEWORK; VARY; SIZE; MASTER; PROBLEM; CHOICE; CANDIDATE; MOTHER; PATTERN; SUB

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06F-0019/00 A I F B 20060101
G06F-0019/00 C I F B 20060101
G06F-0019/00 C I L B 20060101
ECLA: G05B-019/418P
US Classification, Current Main: 700-097000; Secondary: 700-146000, 700-171000, 703-002000

US Classification, Issued: 70097, 700146, 700171, 70097, 700146, 700171, 7032
File Segment: CPI; EPI
DWPI Class: M24; T01
Manual Codes (EPI/S-X): T01-J07B; T01-S03
Manual Codes (CPI/A-M): M24-E

37/5/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0015675126 - Drawing available
WPI ACC NO: 2006-239315/200625
XRPX Acc No: N2006-205339
Optimization repeatability provision method for on-demand computing environment, involves generating normalized physical data instance from multiple physical data instances
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: KUMAR T; PARIJA G R; XI H
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20060058991	A1	20060316	US 2004942040	A	20040916	200625 B

Priority Applications (no., kind, date): US 2004942040 A 20040916

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20060058991	A1	EN	20	11	

Alerting Abstract US A1
NOVELTY - A normalized physical data instance is generated from multiple physical data instances. The normalized physical data instance is combined with an optimization model for forming a unique optimization model instance for removing variability in the optimization model instance.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.optimization method for on-demand computing environment;
2.system for providing optimization repeatability in on-demand computing environment;
3.signal bearing medium tangibly embodying program of machine-readably instructions executed by digital processing apparatus for providing optimization process repeatability in on-demand computing environment; and
4.method of deploying computing infrastructure in which computer-readable code is integrated into a computing system.

USE - For providing optimization repeatability in on-demand computing environment.
ADVANTAGE - Achieves optimization process repeatability by removing variability in optimization model instance. Enables reuse of same data normalization functionality by different optimization services and enhance or extend services without affecting optimization services. Enables to extend and upgrade operating system and data transformation service easily to handle future requirement.
DESCRIPTION OF DRAWINGS - The figure shows a block diagram explaining the optimization repeatability providing process.

Title Terms/Index Terms/Additional Words: OPTIMUM; REPEAT; PROVISION;

METHOD; DEMAND; COMPUTATION; ENVIRONMENT; GENERATE; NORMALISE; PHYSICAL;
DATA; INSTANCE; MULTIPLE

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06F-0009/45 A I F B 20060101
US Classification, Current Main: 703-022000
US Classification, Issued: 70322
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-F05A; T01-F05B2; T01-S03

37/5/8 (Item 8 from file: 350) *****Your case*****
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0014905028 - Drawing available
WPI ACC NO: 2005-252806/200526
XRPX Acc No: N2005-208088
Optimal sales plan development method for multiple product,
involves executing stochastic program based on realized demand
exceeding planned sales volume and order data collected for each time period
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: KALAGNANM J R; MOHANTY M; PARIJA G R
Patent Family (1 patents, 1 countries)
Patent Application
Number Kind Date Number Kind Date Update
US 20050065838 A1 20050324 US 2003664842 A 20030918 200526 B

Priority Applications (no., kind, date): US 2003664842 A 20030918

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 20050065838 A1 EN 16 6

Alerting Abstract US A1
NOVELTY - The method involves formulating the stochastic program
for generating multiple product quantity that is sold for specific time
period and the recommendation for realized demand data exceeding the
planned sales volume. The realized demand exceeding the planned sales
volume, is estimated. The order data for each time period, is collected.
The program is executed based on the estimation and the collected data.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.optimal sales plan developing apparatus; and
2.recorded medium storing optimal sales plan developing program.

USE - For developing optimal sales plan e.g. strategic and
tactical sales plan for multiple product offering.
ADVANTAGE - Enables to develop optimal sales plan for with
multiple price classes contingent on different possible realizations of
uncertain demand over multiple time period with the objective of
maximizing expected revenue over constrained capacity.
DESCRIPTION OF DRAWINGS - The figure shows the flowchart explaining the
steps involved in the optimal sales plan developing process.

Title Terms/Index Terms/Additional Words: OPTIMUM; SALE; PLAN; DEVELOP;
METHOD; MULTIPLE; PRODUCT; EXECUTE; STOCHASTIC; PROGRAM; BASED;
REALISE; DEMAND; VOLUME; ORDER; DATA; COLLECT; TIME; PERIOD

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0040/00 A I R 20060101
G06Q-0040/00 C I R 20060101
ECLA: G06Q-040/00B
US Classification, Current Main: 705-010000
US Classification, Issued: 70510
File Segment: EPI;
DWPI Class: T01; T05
Manual Codes (EPI/S-X): T01-N01A1; T01-N01A2C; T01-S03; T05-L01X; T05-L02

37/5/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0014362146 - Drawing available
WPI ACC NO: 2004-550774/200453
XRPX Acc No: N2004-435477
Business processes optimization process involves converting constraints on dependent uncontrollable business variable into constraints on set of functional parameters, by using respective functional estimate and business variables
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: HECHING A R; LEUNG Y T; LEVANONI M; PARIJA G R
Patent Family (1 patents, 1 countries)
Patent Application
Number Kind Date Number Kind Date Update
US 6760632 B1 20040706 US 2000631793 A 20000803 200453 B

Priority Applications (no., kind, date): US 2000631793 A 20000803

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 6760632 B1 EN 7 2

Alerting Abstract US B1
NOVELTY - The method involves converting the constraints on 'y' comprising a dependent uncontrollable business variable into the constraints on 'b' comprising a set of functional parameters, by using a functional estimate of y and business variables of b. The function f(x,b) is optimized and a set of optimizes values of b which can optimize the dependent business variable, is generated.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.business processes optimization program storage device;
2.computer; and
3.computer readable medium storing business processes optimization program.

USE - For optimizing business processes.
ADVANTAGE - Enables optimizing the business processes, reliably and efficiently.
DESCRIPTION OF DRAWINGS - DESCRIPTION OF DRAWING - The figure shows a flowchart explaining the business processes optimization process.

Title Terms/Index Terms/Additional Words: BUSINESS; PROCESS; OPTIMUM;
CONVERT; CONSTRAIN; DEPEND; UNCONTROLLED; VARIABLE; SET; FUNCTION;
PARAMETER; RESPECTIVE; ESTIMATE

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0010/00 A I R 20060101
G06Q-0010/00 C I R 20060101
ECLA: G06Q-010/00B
US Classification, Current Main: 700-033000; Secondary: 700-034000,705-010000
US Classification, Issued: 70033, 70034, 70510
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-N01A; T01-S03

37/5/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0013329935 - Drawing available
WPI ACC NO: 2003-417320/200339
XRPX Acc No: N2003-332733
Payment discount computing method for winning agents of exchange e.g.
auction, involves computing payment discounts by adjusting Vickrey
discount, so as to constrain exchange to budget balance
Patent Assignee: ESO M (ESOM-I); KALAGNANAM J R (KALA-I); PARKES D C
(PARK-I); INT BUSINESS MACHINES CORP (IBMC)
Inventor: ESO M; KALAGNANAM J R; PARKES D C
Patent Family (2 patents, 1 countries)
Patent Application
Number Kind Date Number Kind Date Update
US 20030028414 A1 20030206 US 2001918990 A 20010731 200339 B
US 7536337 B2 20090519 US 2001918990 A 20010731 200933 E

Priority Applications (no., kind, date): US 2001918990 A 20010731

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 20030028414 A1 EN 14 11
Alerting Abstract US A1
NOVELTY - A Vickrey discount is computed for each winning agent, as the
difference between available surplus with all present agents and the
available surplus without the winning agent. The payment discounts are
computed by adjusting the Vickrey discounts, so as to constrain the
exchange to budget balance.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.payment discount computing program storage device;
2.payment discount computing apparatus; and
3.automated payment discount computing system.

USE - For computing payment discounts for winning agents in marketing
exchanges e.g. auctions.
ADVANTAGE - Minimizes total expected utility of manipulation across all
the winning agents.

DESCRIPTION OF DRAWINGS - The figure illustrates the process of computing payment discounts for winning agents.

Title Terms/Index Terms/Additional Words: PAY; DISCOUNT; COMPUTATION; METHOD; WINNING; AGENT; EXCHANGE; AUCTION; ADJUST; SO; CONSTRAIN; BUDGET; BALANCE
Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0030/00 A I R 20060101
G06Q-0040/00 A I F B 20060101
G06Q-0030/00 C I R 20060101
G06Q-0040/00 C I F B 20090101
ECLA: G06Q-030/00A, G06Q-030/00C4
US Classification, Current Main: 705-010000, 705-037000; Secondary:705-010000
US Classification, Issued: 70510
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2A; T01-S03

37/5/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0013314830 - Drawing available
WPI ACC NO: 2003-401995/200338
XRPX Acc No: N2003-320623
Bid selection method in reverse combinatorial auction, involves modeling demand constraints and minimum/maximum number of suppliers based on counting variables indicating selection of bids in optimal bid set
Patent Assignee: DAVENPORT A J (DAVE-I); KALAGNANAM J R (KALA-I); LEE H S (LEEH-I)
Inventor: DAVENPORT A J; KALAGNANAM J R; LEE H S
Patent Family (1 patents, 1 countries)
Patent Application
Number Kind Date Number Kind Date Update
US 20030033236 A1 20030213 US 2001917818 A 20010731 200338 B

Priority Applications (no., kind, date): US 2001917818 A 20010731

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 20030033236 A1 EN 19 10

Alerting Abstract US A1
NOVELTY - A bid decision variable and a counting variable indicating the selection of bids in optimal bid set, are introduced. Demand constraints for each item and minimum/maximum numbers of suppliers are modeled based on counting variables. Dummy variables are introduced to ensure feasible solution. An objective of choosing bids arriving early is formulated for given cost, based on additional time stamped objective.
USE - For selecting bid in multi-bid reverse combinatorial auction.
ADVANTAGE - Enables to find the optimal cost minimizing bid set when commodities are offered in bundles, automatically.
DESCRIPTION OF DRAWINGS - The figure shows an architecture for an auction or a request-for-quote system.

Title Terms/Index Terms/Additional Words: BID; SELECT; METHOD; REVERSE;

COMBINATION; AUCTION; DEMAND; CONSTRAIN; MINIMUM; MAXIMUM; NUMBER; SUPPLY
; BASED; COUNT; VARIABLE; INDICATE; OPTIMUM; SET

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0030/00 A I R 20060101
G06Q-0030/00 C I R 20060101
ECLA: G06Q-030/00C4
US Classification, Current Main: 705-037000
US Classification, Issued: 70537
File Segment: EPI;
DWPI Class: T01; T05
Manual Codes (EPI/S-X): T01-N01A2A; T05-L02

37/5/12 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0013076021 - Drawing available
WPI ACC NO: 2003-156324/200315
XRPX Acc No: N2003-123411
Computer based manufacture process optimization method involves optimizing representative function of functional form subjected to converted constraints on manufacturing variables among functional parameters
Patent Assignee: HECHING A R (HECH-I); INT BUSINESS MACHINES CORP (IBMC); LEUNG Y T (LEUN-I); LEVANONI M (LEVA-I); PARIJA G R (PARI-I)
Inventor: HECHING A R; LEUNG Y T; LEVANONI M; PARIJA G R
Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 20020161466	A1	20021031	US 2001844116	A	20010427	200315	B
US 6731994	B2	20040504	US 2001844116	A	20010427	200430	E

Priority Applications (no., kind, date): US 2001844116 A 20010427

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20020161466	A1	EN	5	1	

Alerting Abstract US A1
NOVELTY - The constraints on functional form represented as a function of independent controllable and functional parameters, is converted to constraints on functional parameters using functional estimate of functional form. The representative function is optimized and subjected to the converted constraints on manufacturing variables among the parameters. A set of optimized functional values are generated to optimize the dependent manufacturing variable y'.
DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

1.Memory for storing computer based manufacture process optimization program; and
2.Computer.

USE - For providing optimization for manufacturing process.
ADVANTAGE - As the constraints of functional form are converted using functional estimate, a consistent result satisfying all constraints is obtained.
DESCRIPTION OF DRAWINGS - The figure shows a flowchart explaining the manufacture process optimization method.

Title Terms/Index Terms/Additional Words: COMPUTER; BASED; MANUFACTURE;
PROCESS; OPTIMUM; METHOD; REPRESENT; FUNCTION; FORM; SUBJECT; CONVERT;
CONSTRAIN; VARIABLE; PARAMETER

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0010/00 A I R 20060101
G06Q-0010/00 C I R 20060101
ECLA: G06Q-010/00B
US Classification, Current Main: 700-095000, 700-103000; Secondary:
700-028000, 700-029000, 700-030000, 700-033000, 700-171000, 700-173000,
717-151000
US Classification, Issued: 700103, 70033, 70095, 70028, 70029, 70030,
700171, 700173, 717151, 364148
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2B; T01-J07B; T01-S03

37/5/13 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0012824693 - Drawing available
WPI ACC NO: 2002-682399/200273
XRPX Acc No: N2002-538789
Computer-based design process optimization method involves computing
dependent uncontrollable design variable at new set of independent
controllable variables after generating optimized values of design variables
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: HECHING A R; LEUNG Y T; LEVANONI M; PARIJA G R
Patent Family (2 patents, 1 countries)
Patent Application
Number Kind Date Number Kind Date Update
US 20020116158 A1 20020822 US 2001788939 A 20010220 200273 B
US 6853866 B2 20050208 US 2001788939 A 20010220 200511 E

Priority Applications (no., kind, date): US 2001788939 A 20010220

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 20020116158 A1 EN 5 1
Alerting Abstract US A1
NOVELTY - The constraints in a dependent uncontrollable design variable y
of a function y = f(x,b), are converted to constraints on design variables
b using a functional estimate of variable y and its design variables b. The
function subject to the converted constraints is optimized. A set of
optimized values of b which optimizes y, is generated from the optimized
function. The variable y is computed at a new set of independent
controllable variables x.
DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

1.Computer; and
2.Design process optimizing program storage device.

USE - For optimizing various design processes using computer (claimed).

ADVANTAGE - Ensures that the computed dependent design variable y satisfies the constraints on the variable y at the new set of independent variables x.

DESCRIPTION OF DRAWINGS - The figure shows the flowchart illustrating the computer implemented design process optimizing process.

Title Terms/Index Terms/Additional Words: COMPUTER; BASED; DESIGN; PROCESS; OPTIMUM; METHOD; COMPUTATION; DEPEND; UNCONTROLLED; VARIABLE; NEW; SET; INDEPENDENT; CONTROL; AFTER; GENERATE; VALUE

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06F-0017/12 A I R 20060101
G06Q-0010/00 A I R 20060101
G06F-0017/11 C I R 20060101
G06Q-0010/00 C I R 20060101
ECLA: G06F-017/12, G06Q-010/00B
US Classification, Current Main: 703-002000
US Classification, Issued: 7032, 70033, 70034, 7057
File Segment: EPI;
DWPI Class: T01; U21
Manual Codes (EPI/S-X): T01-J04A; T01-J04D; T01-J15; U21-C03D

37/5/14 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0011233649 - Drawing available
WPI ACC NO: 2002-173155/200223
XRPX Acc No: N2002-131557
Computer system for generating virtual wish lists in online shopping over Internet, permits usage of virtual wish lists by other users, when requesting user selectively approves usage after necessary modifications
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: DAVENPORT A J; KALAGNANAM J R; LEE H S; LEE J; LEUNG Y T
Patent Family (5 patents, 29 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
EP 1176531	A1	20020130	EP 2001305916	A	20010709	200223	B
CN 1333513	A	20020130	CN 2001123133	A	20010716	200231	E
KR 2002007163	A	20020126	KR 200140270	A	20010706	200252	E
US 6611814	B1	20030826	US 2000618100	A	20000717	200357	E
US 6873967	B1	20050329	US 2000617496	A	20000717	200522	E

Priority Applications (no., kind, date): US 2000617496 A 20000717; US 2000618096 A 20000717; US 2000618100 A 20000717

Patent Details
Number Kind Lan Pg Dwg Filing Notes
EP 1176531 A1 EN 44 24
Regional Designated States,Original: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

Alerting Abstract EP A1
NOVELTY - The system tracks the requests received from different online stores, identity of requesting user, product identity and store identity,

and stores the tracked requests in web logs. Virtual wish lists (900) are generated for requesting user based on the tracked data. Usage of wish lists by other users is permitted, when the requesting user selectively approves the usage by other users after necessary modifications.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.Virtual wish list generation method;
2.Virtual wish list usage method;
3.Recommended shopping list generation method

USE - For generating virtual wish list in online shopping, electronic commercial transactions performed over computer networks such as Internet.
ADVANTAGE - The system enhances cyber-shopping which allows the development of new and enriching relationship between the customer and retailer. A customer is enabled to examine the catalog in semi-automated way to minimize cost. The retailers are benefited enormously and profit is increased. A convenient shopping service is provided to save customer's time and effort.
DESCRIPTION OF DRAWINGS - The figure shows the block diagram of virtual wish list generation system.
900 Virtual wish lists

Title Terms/Index Terms/Additional Words: COMPUTER; SYSTEM; GENERATE; VIRTUAL; LIST; SHOPPING; PERMIT; USER; REQUEST; SELECT; AFTER; NECESSARY; MODIFIED

Class Codes
International Classification (Main): G06F-017/60
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0030/00 A I R 20060101
G06Q-0030/00 C I R 20060101
ECLA: G06Q-030/00A
US Classification, Current Main: 705-026000; Secondary: 705-027000
US Classification, Issued: 70526, 70527, 70526, 70527
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-N01A2A; T01-N02B1

11/5/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2010 European Patent Office. All rts. reserv.
01386507
System and method for assisting user shopping over computer networks
System und Verfahren zur Unterstutzung von Einkaufen uber ein Computernetzwerk
Systeme et procede permettant d'aider un utilisateur avec des achats en ligne
PATENT ASSIGNEE:
International Business Machines Corporation, (200128), New Orchard Road, Armonk, NY 10504, (US), (Applicant designated States: all)
INVENTOR:
Lee, Juhnyoung, IBM Uk Ltd., IP Law, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)
Kalagnanam, Jayant R., IBM Uk Ltd., IP Law, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)

Davenport, Andrew J., IBM Uk Ltd., IP Law, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)
Lee, Ho Soo, IBM Uk Ltd., IP Law, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)
Leung, Ying Tat, IBM Uk Ltd., IP Law, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)
LEGAL REPRESENTATIVE:
Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 1176531 A1 020130 (Basic)
APPLICATION (CC, No, Date): EP 2001305916 010709;
PRIORITY (CC, No, Date): US 617496 000717; US 618100 000717; US 618096 000717
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE; TR
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS (V7): G06F-017/60
ABSTRACT EP 1176531 A1
A computer system and method generates one or more virtual wish lists of one or more users over one or more networks. The computer system and method also provides a shopping assistant over a computer network for either An online store or a physical store. The system and method includes using user information gathered from one or more stores, one or more databases and the like to create the virtual wish list. The virtual list can be searched and retrieved in order to purchase the product. The system and method also is capable of providing a recommended list of products when a certain other product cannot be found in the online store.
ABSTRACT WORD COUNT: 113
NOTE: Figure number on first page: 1
LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 020130 A1 Published application with search report
Examination: 020515 A1 Date of request for examination: 20020306
Change: 070808 A1 Title of invention (German) changed: 20070808
Change: 070808 A1 Title of invention (English) changed: 20070808
Change: 070808 A1 Title of invention (French) changed: 20070808
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text Language Update Word Count
CLAIMS A (English) 200205 1366
SPEC A (English) 200205 13246
Total word count - document A 14612
Total word count - document B 0
Total word count - documents A + B 14612

NPL Files

20/5/3 (Item 3 from file: 144)
DIALOG(R)File 144:Pascal
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13900913 PASCAL No.: 99-0080890
Approximations for the renewal function
GARG A; KALAGNANAM J R
IBM, T.J. Watson Research Center, Yorktown Heights, United States
Journal: IEEE transactions on reliability, 1998, 47 (1) 66-72

ISSN: 0018-9529 CODEN: IEERAJ Availability: INIST-222G7; 354000077165260100
No. of Refs.: 14 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
& Conclusions This paper describes an accurate, computable approximation for evaluating the renewal function (RF). The method uses Pade approximants to compute the RF near the origin and switches to the asymptotic values farther from the origin. There is a polynomial switch-over function in terms of the coefficient of variation of the distribution, enabling one to determine a priori if the asymptotic value can be used instead of computing the Pade approximant. The results are tested with the truncated Gaussian distribution. The method yields a set of approximants to the RF that are re-usable, and can be used to compute the derivative and the integral of the RF. Results for the RF are within 1% of the optimal solution for most coefficients of variation.

English Descriptors: Approximate method; Renewal process; Pade approximant; Stochastic system; Stock

French Descriptors: Methode approchee; Processus renouvellement; Approximant Pade; Systeme stochastique; Stock

Classification Codes: 001D01A13; 001A02H01K

20/5/4 (Item 4 from file: 144)
DIALOG(R)File 144:Pascal

13187987 PASCAL No.: 97-0451814
Efficient sampling technique for off-line quality control
KALAGNANAM J R; DIWEKAR U M
T.J. Watson Research Cent, Yorktown Heights NY, United States
Journal: Technometrics, 1997, 39 (3) 308-319
ISSN: 0040-1706 CODEN: TCMTA2 Availability: INIST-9949
No. of Refs.: 16 Refs.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
The basic setting of this article is that of parameter-design studies using data from computer models. A general approach to parameter design is introduced by coupling an optimizer directly with the computer simulation model using stochastic descriptions of the noise factors. The computational burden of these approaches can be extreme, however, and depends on the sample size used for characterizing the parametric uncertainties . In this article, we present a new sampling technique that generates and inverts the Hammersley points (a low-discrepancy design for placing n points uniformly in a k-dimensional cube) to provide a representative sample for multivariate probability distributions. We compare the performance of this to a sample obtained from a Latin hypercube design by propagating it through a set of nonlinear functions. The number of samples required to converge to the mean and variance is used as a measure of performance. The sampling technique based on the Hammersley points requires far fewer samples to converge to the variance of the

derived distributions. An application to off-line quality control of a continuous-stirred tank reactor illustrates that the Hammersley points require up to 40 times fewer samples to converge to the variance of the derived distribution.

English Descriptors: Parameter design; Hammersley points; Latin hypercube design; Application; Sampling; Quality control; Computer simulation; Optimization; Random processes; Computational complexity; Probability; Nonlinear equations; Product design; Theory

French Descriptors: Application; Echantillonnage; Controle qualite; Simulation ordinateur; Optimisation; Processus aleatoire; Complexite calcul; Probabilite; Equation non lineaire; Conception produit; Theorie

Classification Codes: 001D01A13; 001A02H01; 001D01A06; 001D02B12; 001D01A; 001D02A

20/5/5 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal
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12909407 PASCAL No.: 97-0175645
Efficient sampling technique for optimization under uncertainty
DIWEKAR U M; KALAGNANAM J R
Center for Energy and Environmental Studies and Dept. of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA 15213, United States
Journal: AIChE journal, 1997, 43 (2) 440-447
ISSN: 0001-1541 CODEN: AICEAC Availability: INIST-7678;
354000063151890160
No. of Refs.: 38 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
The concept of robust design involves identification of design settings that make the product performance less sensitive to the effects of seasonal and environmental variations. This concept is discussed in the context of batch distillation column design with feed stock variations, and internal and external uncertainties .Stochastic optimization methods provide a general approach to robust/parameter design as compared to conventional techniques. However, the computational burden of these approaches can be extreme and depends on the sample size used for characterizing the parametric variations and uncertainties. A novel sampling technique is presented that generates and inverts the Hammersley points (an optimal design for placing n points uniformly on a k-dimensional cube) to provide a representative sample for multivariate probability distributions. The example of robust batch-distillation column design illustrates that the new sampling technique offers significant computational savings and better accuracy.

English Descriptors: Uncertain system; Optimization; Stochastic programming; Sampling design; Distillation; Batchwise; Computer aided design

French Descriptors: Systeme incertain; Optimisation; Programmation stochastique; Plan echantillonnage; Distillation; En discontinu; Conception assistee

Classification Codes: 001D07C

20/5/6 (Item 6 from file: 144)
DIALOG(R)File 144:Pascal

12612463 PASCAL No.: 96-0300851
Robust design using an efficient sampling technique
DIWEKAR U M; KALAGNANAM J R
STEPHANOPOULOS George, ed
Department of Engineering & Public Policy, Carnegie Mellon University, Pittsburgh, PA 15213, United States
Massachusetts Institute of Technology, United States
European Federation of Chemical Engineering. Working Party on Computer Aided Process Engineering, Europe.
European Symposium on Computer Aided Process Engineering ESCAPE, 6Symposium of the Working Party on Computer Aided Process Engineering (CAPE), 29Event of the European Federation of Chemical Engineering (EFCE), 541 (Rhodes GRC) 1996-05-26
Journal: Computers & chemical engineering, 1996, 20 (SUPA) S389-S394
ISSN: 0098-1354 CODEN: CCENDW Availability: INIST-16409; 354000043635460650
No. of Refs.: 13 ref.
Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)
Country of Publication: United Kingdom
Language: English
The concept of robust design involves identification of design settings that make the product performance less sensitive to the effects of seasonal and environmental variations. Batch processes are more flexible compared to continuous processes and are frequently used in these situations. Stochastic optimization methods provide a general approach to robust/parameter design as compared to conventional techniques. However, the computational burden of these approaches can be extreme and depends on the sample size used for characterizing the parametric variations and uncertainties . In this paper, we present a novel sampling technique. The example of robust batch distillation column design illustrates that the new sampling technique offers significant computational savings and better accuracy.

English Descriptors: Computer aided design; Quality control; Optimization; Stochastic programming; Distillation; Batchwise

French Descriptors: Conception assistee; Controle qualite; Optimisation; Programmation stochastique; Distillation; En discontinu

Classification Codes: 001D07C

20/5/7 (Item 7 from file: 144)
DIALOG(R)File 144:Pascal

11799799 PASCAL No.: 94-0678632
An optimization approach to order of magnitude reasoning
KALAGNANAM J R; DIWEKAR U M

Carnegie Mellon univ., cent. energy environmental studies, dep. eng. public policy, Pittsburgh PA 15213, USA
Journal: Artificial intelligence for engineering design, analysis and manufacturing, 1994, 8 (3) 207-217
ISSN: 0890-0604 Availability: INIST-21382; 354000041131980030
No. of Refs.: 25 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United Kingdom
Language: English

English Descriptors: Heat exchanger; Continuous stirred tank reactor; Plug flow; Chemical reactor; Cooler; Optimization method; Magnitude; Order; Variable; Heuristic method; Artificial intelligence; Nonlinearity; Quantitative analysis; Qualitative reasoning; Magnitude order reasoning

French Descriptors: Echangeur chaleur; Reacteur parfaitement agite; Ecoulement piston; Reacteur chimique; Refroidisseur; Methode optimisation; Magnitude; Ordre; Variable; Methode heuristique ; Intelligence artificielle; Non linearite; Analyse quantitative; Raisonnement qualitatif; Raisonnement ordre de magnitude

Classification Codes: 001D06D07D; 001D07C; 230

20/5/8 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC
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10113550
Title: A non-parametric estimator for setting reservation prices in procurement auctions
Author(s): Bichler, M.; Kalagnanam, J.R.
Author Affiliation: Dept. of Informatics, Tech. Univ. of Munich, Garching, Germany
Journal: Information Technology & Management, vol.7, no.3, pp.157-69
Publisher: Kluwer Academic Publishers
Country of Publication: Netherlands
Publication Date: Sept. 2006
ISSN: 1385-951X
SICI: 1385-951X(200609)7:3L.157:PESR;1-G
CODEN: ITMNAG
Item Identifier (DOI): http://dx.doi.org/10.1007/s10799-006-9180-5
Language: English
Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: Electronic auction markets collect large amounts of auction field data. This enables a structural estimation of the bid distributions and the possibility to derive optimal reservation prices. In this paper we propose a new approach to setting reservation prices. In contrast to traditional auction theory we use the buyer's risk statement for getting a winning bid as a key criterion to set an optimal reservation price. The reservation price for a given probability can then be derived from the distribution function of the observed drop-out bids. In order to get an accurate model of this function, we propose a nonparametric technique based on kernel distribution function estimators and the use of order statistics. We improve our estimator by additional information, which can be observed

about bidders and qualitative differences of goods in past auctions rounds (e.g. different delivery times). This makes the technique applicable to RFQs and multi-attribute auctions, with qualitatively differentiated offers (36 refs.)
Subfile(s): C (Computing & Control Engineering); D (Information Technology for Business)
Descriptors: electronic commerce; estimation theory; nonparametric statistics; pricing; procurement; risk management; statistical distributions
Identifiers: nonparametric estimator; optimal reservation prices; electronic auction markets; procurement auctions; auction field data; structural estimation; buyer risk statement; probability; bid distribution function; kernel distribution function estimator; order statistics; RFQ; multiattribute auctions
Classification Codes: C7180 (Retailing and distribution computing); C0300 (Management topics); C1140Z (Other topics in statistics); D2140 (Marketing, retailing and distribution applications of IT); D1000 (General & Management aspects of Information Technology)
INSPEC Update Issue: 2006-041

20/5/9 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

09234965
Title: On bridging the gap between stochastic integer programming and MIP solver technologies
Author(s): Farija, G.R.; Ahmed, S.; King, A.J.
Author Affiliation: Math. Sci. Dept., IBM Thomas J. Watson Res. Center, Yorktown Heights, NY, USA
Journal: INFORMS Journal on Computing, vol.16, no.1, pp.73-83
Publisher: INFORMS
Country of Publication: USA
Publication Date: Winter 2004
ISSN: 0899-1499
SICI: 0899-1499(200424)16:1L.73:BBSI;1-W
CODEN: OJCOE3
Item Identifier (DOI): http://dx.doi.org/10.1287/ijoc.1020.0005
Language: English
Document Type: Journal Paper (JP)
Treatment: Theoretical or Mathematical (T)
Abstract: Stochastic integer programs (SIPs) represent a very difficult class of optimization problems arising from the presence of both uncertainty and discreteness in planning and decision problems. Although applications of SIPs are abundant, nothing is available by way of computational software. On the other hand, commercial software packages for solving deterministic integer programs have been around for quite a few years, and more recently, a package for solving stochastic linear programs has been released. In this paper, we describe how these software tools can be integrated and exploited for the effective solution of general-purpose SIPs. We demonstrate these ideas on four problem classes from the literature and show significant computational advantages (42 refs.)
Subfile(s): C (Computing & Control Engineering)
Descriptors: integer programming; stochastic programming
Identifiers: stochastic integer programming; mixed integer

programming; optimization; computational software; software package
Classification Codes: C1180 (Optimisation techniques)
INSPEC Update Issue: 2005-002
Copyright: 2005, IEE

20/5/10 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS
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2405102 NTIS Accession Number: PB2008-102067/XAB
System and Method for Optimization Process Repeatability in an On-Demand Computing Environment
Kumar, T. ; Parija, G. R. ; Xi, H.
McGin Intellectural Property Law Group, PLLC. Vienna, VA.
Corp. Source Codes: 888888888
Sponsor: Department of Agriculture, Washington, DC.
Report No.: PAT-APPL-10-942 040
Filed 16 Sep 04 20p
Languages: English Document Type: Patent
Journal Announcement: USGRDR0804
Sponsored by Department of Agriculture, Washington, DC.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231. Product reproduced from digital image.
NTIS Prices: PC A03/MF A01
Country of Publication: United States
Contract No.: 43-82X9-3-5073
A method (and system) of providing optimization repeatability in an on-demand computing environment removes variability in an optimization model instance and can be exemplarily implemented in a service architecture. The method and system receives a plurality of physical data instances, which are different representations of the same logical data model, and transforms the plurality of physical data instances into a normalized physical data instance, which can be combined with an optimization model to form a unique optimization model instance, thereby providing repeatability in solving optimization problems.
Descriptors: *Patent applications; *Optimization; *Repeatability; Computer architecture; Logical models
Identifiers: NTISGPAG
Section Headings: 62B (Computers, Control, and Information Theory--Computer Software); 62A (Computers, Control, and Information Theory--Computer Hardware); 90GE (Government Inventions For Licensing--General)

20/5/11 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
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0016248679 E.I. COMPENDEX No: 2004508715525
A computational study of the kemeny rule for preference aggregation
Issue Title: Proceedings - Nineteenth National Conference on Artificial Intelligence (AAAI-04): Sixteenth Innovative Applications of Artificial Intelligence Conference (IAAI-2004)
Davenport, Andrew; Kalagnanam, Jayant
Corresp. Author/Affil: Davenport, A.: IBM T.J. Watson Research Center, Yorktown Heights, NY 10598, United States

Corresp. Author email: davenport@us.ibm.com
Author email: jayant@us.ibm.com
Conference Title: Proceedings - Nineteenth National Conference on Artificial Intelligence (AAAI-2004): Sixteenth Innovative Applications of Artificial Intelligence Conference (IAAI-2004)
Conference Location: San Jose, CA United States Conference Date: 20040725-20040729
Sponsor: American Association for Artificial Intelligence; Association for Computing Machinery ACM/SIGART; Defense Advanced Research Project Agency (DARPA); Google, Inc.; IBM Research
E.I. Conference No.: 63904
Proceedings of the National Conference on Artificial Intelligence (Proc Natl Conf Artif Intell) (United States) 2004, (697-702)
Publication Date: 20041214
Publisher: American Association for Artificial Intelligence
CODEN: PNAIE
Document Type: Conference Paper; Conference Proceeding Record Type: Abstract
Treatment: T; (Theoretical)
Language: English Summary Language: English
Number of References: 14
We consider from a computational perspective the problem of how to aggregate the ranking preferences of a number of alternatives by a number of different voters into a single consensus ranking, following the majority voting rule. Social welfare functions for aggregating preferences in this way have been widely studied since the time of Condorcet (1785). One drawback of majority voting procedures when three or more alternatives are being ranked is the presence of cycles in the majority preference relation. The Kemeny order is a social welfare function which has been designed to tackle the presence of such cycles. However computing a Kemeny order is known to be NP-hard. We develop a greedy heuristic and an exact branch and bound procedure for computing Kemeny orders. We present results of a computational study on these procedures.
Descriptors: Cost effectiveness; Mathematical techniques; Optimization; Probability; Problem solving; Search engines; Voting machines; *Computational complexity
Identifiers: Computational study; Condorcet methods; Kemeny rule; Preference aggregation
Classification Codes:
921.5 (Optimization Techniques)
911.2 (Industrial Economics)
922.1 (Probability Theory)
723.4 (Artificial Intelligence)
721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory))
601.1 (Mechanical Devices)
921 (Applied Mathematics)
723 (Computer Software, Data Handling & Applications)

20/5/12 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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11527542 Genuine Article#: 663KX Number of References: 38
Title: A multi-stage stochastic integer programming approach for capacity expansion under uncertainty
Author: Ahmed S (REPRINT) ; King A; Parija G

Corporate Source: Georgia Inst Technol,Sch Ind & Syst Engn,765 Ferst Dr/Atlanta//GA/30332 (REPRINT); Georgia Inst Technol,Sch Ind & Syst Engn,Atlanta//GA/30332; IBM Corp,Thomas J Watson Res Ctr, Math Sci Div,Yorktown Hts//NY/10598
Journal: JOURNAL OF GLOBAL OPTIMIZATION, 2003, V26, N1 (MAY), P3-24
ISSN: 0925-5001 Publication Date: 20030500
Publisher: KLUWER ACADEMIC PUBL, VAN GODEWIJCKSTRAAT 30, 3311 GZ DORDRECHT, NETHERLANDS
Language: English Document Type: ARTICLE
Geographic Location: USA
Journal Subject Category: OPERATIONS RESEARCH & MANAGEMENT SCIENCE; MATHEMATICS, APPLIED
Abstract: This paper addresses a multi-period investment model for capacity expansion in an uncertain environment. Using a scenario tree approach to model the evolution of uncertain demand and cost parameters, and fixed-charge cost functions to model the economies of scale in expansion costs, we develop a multi-stage stochastic integer programming formulation for the problem. A reformulation of the problem is proposed using variable disaggregation to exploit the lot-sizing substructure of the problem. The reformulation significantly reduces the LP relaxation gap of this large scale integer program. A heuristic scheme is presented to perturb the LP relaxation solutions to produce good quality integer solutions. Finally, we outline a branch and bound algorithm that makes use of the reformulation strategy as a lower bounding scheme, and the heuristic as an upper bounding scheme, to solve the problem to global optimality. Our preliminary computational results indicate that the proposed strategy has significant advantages over straightforward use of commercial solvers.
Descriptors: SCI Author Keywords: capacity expansion ; stochastic integer programming ; reformulation ; heuristic ; branch & bound
Identifiers: KeyWord Plus(R): DEMAND UNCERTAINTY; SERVICE INDUSTRY; ONE LOCATION; OPTIMIZATION; TELECOMMUNICATIONS; INVESTMENT; SYSTEM
Cited References:
*IBM CORP, IBM STOCH SOL
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SANIEE I, 1995, V43, P187, OPER RES
SWAMINATHAN JM, 2000, V120, P545, EUR J OPER RES

20/5/13 (Item 1 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

02238353 20070805376
Strategic planning of preparedness budgets for wildland fire management
(Strategische Planung der Einsatzbereitschafts-Budgets fuer das Management
von Wald- und Flaechenbraenden)
Parija, Gyana; Kumar, Tarun; Xi, Haifeng; Keller, Dan
IBM T.J. Watson Research Center, Yorktown Heights, NY, US; USDA Forest
Service, Golden, US
IBM Journal of Research and Development, v51, n3/4, pp375-390, 2007
Document type: journal article Language: English
Record type: Abstract
ISSN: 0018-8646

ABSTRACT:
As part of the prototyping effort for the preparedness module (PM) of the Fire Program Analysis (FPA) system that IBM developed for five U.S. federal agencies, the authors designed and implemented an optimization model for determining budgets necessary for managing wildland fires during the initial response period. For a given budget, the model uses a mixed-integer linear optimization approach to maximize the number of acres managed (i.e., land protected from fire damage as a result of the initial response). The model is solved iteratively to establish a function that maps best achievable efftectiveness, in terms of acres managed, at different budget levels. To handle the computationally prohibitive size of the resulting model instances, the authors devised a heuristic-based solution approach, and they reformulated the client's original model by switching to a continuous time domain and introducing piecewise-linearized functions. As a result, they not only built a tractable model, but also succeeded in delivering a performance speedup of more than 150 fold. They also conducted validation experiments for certain assumptions in the model to assess their impact on the solution quality.

DESCRIPTORS: STRATEGIC PLANNING; FIRE PROTECTION; FOREST FIRE; READINESS--GENERAL; COST FUNCTION; FIRE DEPARTEMENT; FORMULA--MATHEMATICS; MODEL SIMULATION; COMPUTER PERFORMANCE; COMPUTATIONAL RESULT; STOCHASTIC MODELS
IDENTIFIERS: strategische Planung; Feuerschutz; Bereitschaft

18/5/3 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
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03269336 1073229911
A non-parametric estimator for setting reservation prices in procurement auctions
Bichler, Martin; Kalagnanam, Jayant R
Information Technology & Management v7n3 PP: 157-169 Sep 2006 ISSN: 1385-951X JRNL CODE: IFTM
DOC TYPE: Periodical; Feature LANGUAGE: English RECORD TYPE: Abstract
SPECIAL FEATURE: Equations Graphs Tables References

DESCRIPTORS: Studies; Electronic commerce; Auctions; Estimating techniques; Mathematical models; Prices; Probability
CLASSIFICATION CODES: 9130 (CN=Experimental/Theoretical); 8390 (CN=Retailing industry); 5250 (CN=Telecommunications systems & Internet communications); 2600 (CN=Management science/Operations research)
PRINT MEDIA ID: 53450

ABSTRACT: Electronic auction markets collect large amounts of auction field data. This enables a structural estimation of the bid distributions and the possibility to derive optimal reservation prices. In this paper we propose a new approach to setting reservation prices. In contrast to traditional auction theory we use the buyer's risk statement for getting a winning bid as a key criterion to set an optimal reservation price. The reservation price for a given probability can then be derived from the distribution function of the observed drop-out bids. In order to get an accurate model of this function, we propose a nonparametric technique based on kernel distribution function estimators and the use of order statistics. We improve our estimator by additional information, which can be observed about bidders and qualitative differences of goods in past auctions rounds (e.g. different delivery times). This makes the technique applicable to RFQs and multi-attribute auctions, with qualitatively differentiated offers. (PUBLICATION ABSTRACT)

18/5/4 (Item 4 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2010 ProQuest Info&Learning. All rts. reserv.
03167706 999472031
A Column-Generation Approach to the Multiple Knapsack Problem with Color Constraints
Forrest, John J H; Kalagnanam, Jayant; Ladanyi, Laszlo
INFORMS Journal on Computing v18n1 PP: 129-134 Winter 2006 ISSN: 1091-9856 JRNL CODE: INJC
DOC TYPE: Periodical; Feature LANGUAGE: English RECORD TYPE: Fulltext
LENGTH: 6 Pages
SPECIAL FEATURE: Tables Equations References
WORD COUNT: 3448

DESCRIPTORS: Studies; Integer programming; Inventory management; Steel industry; Optimization algorithms; Mathematical models
CLASSIFICATION CODES: 9130 (CN=Experimental/Theoretical); 2600 (CN=Management science/Operations research); 5330 (CN=Inventory management); 5240 (CN=Software & systems); 8660 (CN=Metalworking industry)

PRINT MEDIA ID: 54434

ABSTRACT: In this paper, we study a new problem that we refer to as the multiple knapsack with color constraints (MKCP). Motivated by a real application from the steel industry, the MKCP can be formulated by generalizing the multiple knapsack problem. A real-life instance (called mkc) of this problem class is available through MIPLIB (Bixby 2004) and a larger instance (mkc7) is downloadable from the COIN site (IBM 2004). The focus of this paper is to present improved computational results for the two mentioned instances of this problem using a column-generation approach. We solve mkc to optimality and use Dantzig-Wolfe decomposition for upper bounding the other instance. Solving mkc to optimality took less time than it takes to solve the LP relaxation of the original formulation. The larger instance is solved to near optimality (within 0.5% of optimality) in a fraction of the time required to solve the original relaxed LP. (PUBLICATION ABSTRACT)

18/5/9 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB
(c) 2010 Gale/Cengage. All rts. reserv.
12140673 SUPPLIER NUMBER: 61371580 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Operations planning in a supply chain system with fixed-interval deliveries of finished goods to multiple customers.
FARIJA, GYANA R.; SARKER, BHABA R.
IIE Transactions, 31, 11, 1075
Nov, 1999
ISSN: 0740-817X LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 6211 LINE COUNT: 00540

INDUSTRY CODES/NAMES: BUSN Any type of business; ENG Engineering and Manufacturing
DESCRIPTORS: Production management--Technique; Logistics--Planning; Distribution channels--Management; Delivery of goods--Planning
GEOGRAPHIC CODES/NAMES: 1USA United States
FILE SEGMENT: AI File 88

18/5/10 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2010 Gale/Cengage. All rts. reserv.
01402067 SUPPLIER NUMBER: 10808784
The mathematical bases for qualitative reasoning.
Kalagnanam, Jayant; Simon, Herbert A.; Iwasaki, Yumi
IEEE Expert, v6, n2, p11(9)
April, 1991
ISSN: 0885-9000 LANGUAGE: ENGLISH RECORD TYPE: ABSTRACT

ABSTRACT: The standard formalisms of algebra and calculus can be used to explain the practices of qualitative reasoning that underlie the practices of researchers in many fields. This information is vital to artificial intelligence researchers because qualitative research makes it possible to reach conclusions that are robust to the uncertainties of knowledge. Much of what is considered commonsense qualitative reasoning is actually implicit reasoning about the ordinal relations between variables, as opposed to cardinal variables. Another important part of qualitative analysis is comparative statics, which make it possible to evaluate the

effect of a change in a system's equilibrium when a parameter changes.
CAPTIONS: Equilibrium for economic markets. (graph); Effects of an
external disturbance on a two-equation equilibrium system. (table)

SPECIAL FEATURES: illustration; graph; table
DESCRIPTORS: Mathematical Logic; Artificial Intelligence; Comparative
Study; Analysis of Variance
FILE SEGMENT: AI File 88

III. Text Search Results from Dialog

A. Patent Files, Abstract

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File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
File 344:Chinese Patents Abs Jan 1985-2006/Jan
         (c) 2006 European Patent Office
File 347:JAPIO Dec 1976-2009/Sep(Updated 091230)
         (c) 2010 JPO & JAPIO
File 350:Derwent WPIX 1963-2009/UD=201007
         (c) 2010 Thomson Reuters

Set     Items   Description
S1      20233   (OPTIM? OR IDEAL OR BEST OR DESIRED OR DESIRABLE OR WANTED-
             )(5N)(PLAN OR PLANS OR PROGRAM OR PROGRAMS OR PROGRAMME OR PR-
             OGRAMMES OR SCHEME OR SCHEMES OR STRATEGY OR STRATEGIES)
S2     190021   (MULTIPLE OR MANY OR PLURALITY OR MULTITUDE OR SEVERAL OR -
             VARIOUS OR DIFFERENT OR ASSORTED)(5N)(PRODUCT OR PRODUCTS OR -
             ITEM OR ITEMS OR ARTICLE OR ARTICLES OR OBJECT OR OBJECTS OR -
             MERCHANDISE OR GOODS OR WARES)
S3        258   (DEMAND OR DEMANDS OR NEED OR NEEDS)(5N)(UNCERTAIN? OR UNK-
             NOWN OR UNCLEAR OR UNDETERMINED OR "NOT"()(CERTAIN OR CLEAR OR
              KNOWN OR DETERMINED) OR VAGUE)
S4    5945602   TIME OR TIMES OR PERIOD OR PERIODS OR STAGE OR STAGES OR I-
             NTERVAL OR INTERVALS
S5    3630568   PRICE OR PRICES OR CLASS OR CLASSES OR GROUP OR GROUPS OR -
             FAMILY OR FAMILIES OR CATEGORY OR CATEGORIES
S6     178586   (EXCEED? OR SURPASS? OR PASS? OR (GO OR GOING OR GOES OR W-
             ENT)()(OVER OR ABOVE OR BEYOND))(10N)(ALLOCATION OR ALLOCATIO-
             NS OR VOLUME OR VOLUMES OR QUANTITY OR QUANTITIES OR AMOUNT OR
              AMOUNTS OR NUMBER OR NUMBERS OR DISTRIBUTION OR DISTRIBUTIONS
              OR INVENTORY OR INVENTORIES)
S7     910089   STOCHASTIC? OR RANDOM? OR PROBAB? OR VARIAB? OR UNCERTAIN?
             OR LIKELIHOOD?
S8      26771   (REALIZ? OR REALIS? OR COLLECTED OR REAL OR SUBSTANTIAT?)(-
             8N)(ORDER OR ORDERS OR REQUEST OR REQUESTS OR DEMAND OR DEMAN-
             DS OR NEED OR NEEDS)
S9      13023   (MAXIMIZ? OR MAXIMIS? OR INCREAS? OR BUILD?)(10N)(REVENUE?
             OR INCOME? OR RETURN OR RETURNS OR PROFIT OR PROFITS)
S10         1   AU=( KALAGNANM J? OR KALAGNANM, J? OR KALAGNANM (2N)(J OR -
             JAYANT))
S11         2   AU=( MOHANTY M? OR MOHANTY, M? OR MOHANTY (2N)(M OR MONALI-
             SA))
S12        20   AU=( PARIJA G? OR PARIJA, G? OR PARIJA (2N)(G OR GYANA))
S17      2211   S1 AND S7
S18        25   S17 AND S9
S19        10   S18 AND IC=(G06F-017/60 OR G06F-0017/60 OR G06Q-040/00 OR -
             G06Q-0040/00)
S20         2   S3 AND S6
S21    194031   (BID OR BIDS OR OFFER OR OFFERS OR ORDER OR ORDERS OR REQU-
             EST OR REQUESTS)(5N)(ACCEPT? OR RECEIV? OR TAKE? OR TAKING)
S22         1   S1 AND S3 AND S21
S23       104   S1 AND S9
S24        58   S23 AND (S2 OR S4 OR S6)
S25        20   S24 AND IC=(G06F-017/60 OR G06F-0017/60 OR G06Q-040/00 OR -
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            G06Q-0040/00)
S26         10   S1 AND S3 AND S7
S27          1   S1 AND S2 AND S3
S28         33   S19 OR S20 OR S22 OR S25:S27
S29         25   S28 AND AY=1950:2003
S30         16   AU=( KALAGNANAM J? OR KALAGNANAM, J? OR KALAGNANAM (2N)(J -
            OR JAYANT))
S31         36   S10:S12 OR S30
S32          3   S31 AND IC=(G06F-017/60 OR G06F-0017/60 OR G06Q-040/00 OR -
            G06Q-0040/00)
S33         22   S31 AND S7
S34          1   S33 AND IC=(G06F-017/60 OR G06F-0017/60 OR G06Q-040/00 OR -
            G06Q-0040/00)
S35         12   S31 AND S1
S36         12   S35 AND IC=(G06Q OR G06F)
S37         14   S32 OR S34 OR S36


29/5/1     (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0019441446  - Drawing available
WPI ACC NO: 2009-N12573/200958
Related WPI Acc No: 2004-153983
Computer-implemented resource's multivariate allocation optimizing method,
involves solving for maximum of blocks over variables of
representation, and determining and presenting optimum level of resources
as function of solved for maximums
Patent Assignee: MICROSOFT CORP  (MICT)
Inventor: CHAVEZ T A; DAGUM P
Patent Family (1 patents,  1 countries)
Patent                          Application
Number          Kind   Date     Number          Kind   Date    Update
US 7584112       B1  20090901  US 2000491461    A  20000126  200958  B
                                US 1999412560    A  19991005

Priority Applications (no., kind, date): US 1999412560  A  19991005; US
  2000491461  A  20000126

Patent Details
Number          Kind  Lan   Pg  Dwg  Filing Notes
US 7584112       B1  EN    24   12  C-I-P of application  US 1999412560
                                      C-I-P of patent  US 6684193

  Alerting Abstract US B1
  NOVELTY - The method involves performing a reloading step to form
elemental blocks as a function of a single variable of a multivariate
representation with a present working element being reloaded with a
resource, when examining indicates that the element is not loaded with the
resource. Maximum of each elemental block over each associated single
variable of the multivariate representation is solved using a
computer. An optimum level of the resources is determined and presented as
a function of the solved for maximums.
  USE - Computer-implemented method for optimizing multivariate allocation
of resources. Uses include but are not limited to gas energy, nuclear
energy, electric energy, space, real estate, employees and liquid capital
```

for investment, bond, stock, and option.
ADVANTAGE - The method provides an efficient unconstrained and nonlinear constrained optimization solution to the multivariate allocation of the resources to meet manufacturing needs for uncertain multiproduct demand.
DESCRIPTION OF DRAWINGS - The drawing shows a block diagram of a system configuration that utilizes an optimization method for optimizing multivariate allocation of resources.
102 Main element
104 Product demand data
106 Component consumption data
108 Financial information
110 Operational information

Title Terms/Index Terms/Additional Words: COMPUTER; IMPLEMENT; RESOURCE; ALLOCATE; OPTIMUM; METHOD; SOLVING; MAXIMUM; BLOCK; VARIABLE; REPRESENT; DETERMINE; PRESENT; LEVEL; FUNCTION

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06F-0009/46 A I F B 20060101
G06F-0009/46 C I B 20060101
US Classification, Current Main: 705-008000; Secondary: 700-028000, 703-002000, 703-006000, 709-009000
US Classification, Issued: 7058, 7099, 7032, 7036, 70028
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-F01B; T01-F02C2; T01-F03; T01-F05G3

29/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0018104578 - Drawing available
WPI ACC NO: 2008-K24905/200861
Related WPI Acc No: 2005-423823
XRPX Acc No: N2008-745683
Stochastic integer programming based constrained optimization method for allocation of e.g. education and training instructor to requested class, involves generating revenue/profit optimization model under planning scenarios
Patent Assignee: DAVIDSON D J (DAVI-I); PARIJA G R (PARI-I); SHARMA S (SHAR-I)
Inventor: DAVIDSON D J; PARIJA G R; SHARMA S
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20080208664	A1	20080828	US 2003714620	A	20031118	200861 B
			US 2008114885	A	20080505	

Priority Applications (no., kind, date): US 2003714620 A 20031118; US 2008114885 A 20080505

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20080208664	A1	EN	11	5	Continuation of application US 2003714620

Alerting Abstract US A1

NOVELTY - The method involves inputting a list of classes, cancellation probabilities and available classrooms and education and training instructors. Operational revenue/profit is analyzed under different planning scenarios involving chaining of multiple classes, prerequisite relationships and inter-class spacing requirements. A revenue/profit optimization model of the overall operational revenue/profit is generated under the different planning scenarios. A stochastic program of the revenue/profit optimization model is solved by solving a deterministic equivalent.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for implementing stochastic integer programming based constrained optimization for allocation of classrooms and instructors to requested classes associated with cancellation probabilities.

USE - Stochastic integer programming based constrained optimization method for allocation of a classroom and an education and training instructor to a requested class associated with cancellation probability in an educational institution.

ADVANTAGE - The method enables optimal allocation of the classrooms and the education and training instructors to the requested classes associated with cancellation probabilities.

DESCRIPTION OF DRAWINGS - The drawing shows a block representation of system architecture of a scheduling system.

10 Training administration database system
11 Data processing system
13 Data processor
15 Data postprocessor
16 Automatic block scheduling legacy application

Title Terms/Index Terms/Additional Words: STOCHASTIC; INTEGER; PROGRAM; BASED; CONSTRAIN; OPTIMUM; METHOD; ALLOCATE; EDUCATION; TRAINING; INSTRUCTION; REQUEST; CLASS; GENERATE; REVENUE; PROFIT; MODEL; PLAN

Class Codes
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06F-0017/50 A I F B 20060101
G09B-0019/00 A I R 20060101
G06F-0017/50 C I F B 20060101
G09B-0019/00 C I R 20060101
US Classification, Current Main: 705-007000
US Classification, Issued: 7057
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05B4P; T01-J15X; T01-J30A

29/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0016944704 - Drawing available
WPI ACC NO: 2007-659769/200762
XRPX Acc No: N2007-515658
Spot market-based inventory planning method for e.g. auto manufacturer, involves computing and generating optimal safety stock level record for product to cover uncertainty in demand
Patent Assignee: HEWLETT-PACKARD DEV CO LP (HEWP)

Inventor: CALLIONI G; KAKOUROS S; NEALE J J
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 7249068	B1	20070724	US 2000608057	A	20000630	200762 B

Priority Applications (no., kind, date): US 2000608057 A 20000630

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 7249068	B1	EN	18	13	

Alerting Abstract US B1

NOVELTY - The method involves computing and generating an optimal safety stock level record for a product to cover uncertainty in demand over an exposure period with the desired service level. A maximum safety stock level of the product is determined to cover the uncertainty in demand over the period with the product being supplied solely from non-spot market sources. A web site providing information relating to spot market sources is navigated, and a stochastic simulation of random variables is performed. The maximum safety stock level is measured based upon a measure of demand for the product.

USE - Used for planning a spot market-based inventory by utilizing a server computer over a network e.g. local area network, wide area network, and Internet, when supply is available from a spot market, for large manufacturing enterprises such as computer manufacturer, electronics manufacturer and auto manufacturer.

ADVANTAGE - The method enables an asset manager to cover uncertainty in future end customer demand with the safety stock level that is less than the safety stock level required to cover expected demand with the desired service level when supply is available only from non-spot market sources, thus reducing overall product costs of spot market.

DESCRIPTION OF DRAWINGS - The drawing shows a block representation of a distribution network.

10 Distribution system

Title Terms/Index Terms/Additional Words: SPOT; MARKET; BASED; INVENTORY; PLAN; METHOD; AUTO; MANUFACTURE; COMPUTATION; GENERATE; OPTIMUM; SAFETY; STOCK; LEVEL; RECORD; PRODUCT; COVER; UNCERTAINTY; DEMAND

Class Codes
International Classification (+ Attributes)

IPC + Level	Value	Position	Status	Version
G06G-0001/00	A	I	F B	20060101
G06G-0001/00	C	I	B	20060101

US Classification, Issued: 70528, 70526
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2D; T01-J15H; T01-N01A2E; T01-N02A2B; T01-N03A1

29/5/4 (Item 4 from file: 350) *****Your case*****
DIALOG(R)File 350:Derwent WPIX

0014905028 - Drawing available
WPI ACC NO: 2005-252806/200526

XRPX Acc No: N2005-208088
Optimal sales plan development method for multiple product, involves executing stochastic program based on realized demand exceeding planned sales volume and order data collected for each time period
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: KALAGNANM J R; MOHANTY M; PARIJA G R
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20050065838	A1	20050324	US 2003664842	A	20030918	200526 B

Priority Applications (no., kind, date): US 2003664842 A 20030918

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20050065838	A1	EN	16	6	

Alerting Abstract US A1
NOVELTY - The method involves formulating the stochastic program for generating multiple product quantity that is sold for specific time period and the recommendation for realized demand data exceeding the planned sales volume. The realized demand exceeding the planned sales volume, is estimated. The order data for each time period, is collected. The program is executed based on the estimation and the collected data.
DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.optimal sales plan developing apparatus; and
2.recorded medium storing optimal sales plan developing program.

USE - For developing optimal sales plan e.g. strategic and tactical sales plan for multiple product offering.
ADVANTAGE - Enables to develop optimal sales plan for with multiple price classes contingent on different possible realizations of uncertain demand over multiple time period with the objective of maximizing expected revenue over constrained capacity.
DESCRIPTION OF DRAWINGS - The figure shows the flowchart explaining the steps involved in the optimal sales plan developing process.
Title Terms/Index Terms/Additional Words: OPTIMUM; SALE; PLAN; DEVELOP; METHOD; MULTIPLE; PRODUCT; EXECUTE; STOCHASTIC; PROGRAM; BASED; REALISE; DEMAND; VOLUME; ORDER; DATA; COLLECT; TIME; PERIOD

Class Codes
International Classification (+ Attributes)

IPC + Level Value	Position	Status	Version
G06Q-0040/00 A	I	R	20060101
G06Q-0040/00 C	I	R	20060101

ECLA: G06Q-040/00B
US Classification, Current Main: 705-010000
US Classification, Issued: 70510
File Segment: EPI;
DWPI Class: T01; T05
Manual Codes (EPI/S-X): T01-N01A1; T01-N01A2C; T01-S03; T05-L01X; T05-L02

29/5/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0013927119 - Drawing available
WPI ACC NO: 2004-107031/200411
XRAM Acc No: C2004-043673
XRPX Acc No: N2004-085037
Polymer production scheduling optimizer system for determining grade levels, quantities, when to produce, when to transit, and which process line to use for each product(s) has optimizer
Patent Assignee: HWANG C (HWAN-I); LIANO K (LIAN-I); LU Y (LUYY-I); PAVILION TECHNOLOGIES INC (PAVI-N); PUTRAJAYA W (PUTR-I); SCHWEIGER C (SCHW-I)
Inventor: HWANG C; LIANO K; LU Y; PUTRAJAYA W; SCHWEIGER C
Patent Family (4 patents, 101 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 20030220828	A1	20031127	US 2002382856	P	20020523	200411	B
			US 2003374159	A	20030224		
WO 2003099876	A2	20031204	WO 2003US16487	A	20030523	200411	E
AU 2003248573	A1	20031212	AU 2003248573	A	20030523	200443	E
AU 2003248573	A8	20051027	AU 2003248573	A	20030523	200624	E

Priority Applications (no., kind, date): US 2002382856 P 20020523; US 2003374159 A 20030224

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030220828	A1	EN	42	15	Related to Provisional US 2002382856
WO 2003099876	A2	EN			

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Regional Designated States,Original: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2003248573	A1	EN	Based on OPI patent	WO 2003099876
AU 2003248573	A8	EN	Based on OPI patent	WO 2003099876

Alerting Abstract US A1

NOVELTY - Polymer production scheduling optimizer system comprises input, model of polymer production system, optimizer, and output. The input is operable to receive optimization input information. The model of polymer production system comprises transition models representing transition behavior of polymer production system. The optimizer executes model using received optimization input information to generate optimized polymer production schedule.

DESCRIPTION - Polymer production scheduling optimizer system comprises input, model of polymer production system, optimizer, and output. The input is operable to receive optimization input information. The model of polymer production system comprises transition models representing transition behavior of the polymer production system. The optimizer executes the model using the received optimization input information to generate an optimized polymer production schedule. The output is operable to output the generated optimized polymer production schedule. The optimized polymer production schedule is usable to manage polymer production with polymer production system.

USE - For optimizing polymer production scheduling for determining grade levels, quantities, when to produce, when to transit, and which process line to use for each product(s) (claimed).
ADVANTAGE - The invention minimizes the cost and time required of transition from one grade of polymer to the next and provides improved polymer production operations.
DESCRIPTION OF DRAWINGS - The figure shows the method.

Title Terms/Index Terms/Additional Words: POLYMER; PRODUCE; SCHEDULE; OPTIMUM; SYSTEM; DETERMINE; GRADE; LEVEL; QUANTITY; TRANSIT; PROCESS; LINE; PRODUCT

Class Codes
International Classification (Main): C08F, G06F-017/60
ECLA: C08F-002/00, G06Q-010/00C
US Classification, Current Main: 705-008000; Secondary: 700-197000
US Classification, Issued: 7058, 700197
File Segment: CPI; EPI
DWPI Class: A18; A26; T01; T06; X25
Manual Codes (EPI/S-X): T01-N01A; T06-A05; T06-A07B; T06-D13; X25-A06
Manual Codes (CPI/A-M): A09-D03; A12-L04

29/5/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0013891210 - Drawing available
WPI ACC NO: 2004-070426/200407
XRPX Acc No: N2004-056720
Strategy independent optimization method for financial contract, involves generating set with sequence of results obtained by varying parameter of selected strategy to apply generic algorithm model
Patent Assignee: CENT DEV ADVANCED COMPUTING (ADCO-N); DHURANDHAR M (DHUR-I); PAWAR K (PAWA-I)
Inventor: DHURANDHAR M; PAWAR K
Patent Family (4 patents, 2 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 20030233304	A1	20031218	US 2002196960	A	20020717	200407	B
IN 200200523	I3	20050325	IN 2002MU523	A	20020613	200548	E
US 7395235	B2	20080701	US 2002196960	A	20020717	200845	E
IN 196505	B	20051118	IN 2002MU523	A	20020613	200966	E

Priority Applications (no., kind, date): IN 2002MU523 A 20020613; US 2002196960 A 20020717

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030233304	A1	EN	41	7	
IN 200200523	I3	EN			
IN 196505	B	EN			

Alerting Abstract US A1
NOVELTY - The method involves selecting a strategy defined by rules to determine a set of parameters. A generic algorithm model including a convergence is created and a sequence of specifications for the parameters

is determined for the model. A set having sequence of results obtained by varying the parameters is generated to apply the model to the set for creating an intermediate generation of optimized multi-objective function.

DESCRIPTION - An INDEPENDENT CLAIM is also included for an apparatus for carrying out a method for strategy independent optimization of multi-objective function of a portfolio

USE - Used for strategy independent optimization in financial contract.

ADVANTAGE - The generic algorithm model achieves optimal results quickly in a vast search space, thereby providing a cost-effective method for returns maximization and risk minimization.

DESCRIPTION OF DRAWINGS - The drawing shows a flow chart of a method for strategy independent optimization of a multi-objective function of a portfolio.

Title Terms/Index Terms/Additional Words: STRATEGY; INDEPENDENT; OPTIMUM; METHOD; FINANCIAL; CONTRACT; GENERATE; SET; SEQUENCE; RESULT; OBTAIN; VARY; PARAMETER; SELECT; APPLY; ALGORITHM; MODEL

Class Codes
International Classification (Main): B41B
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G06Q-0040/00 A I F B 20060101
G06Q-0040/00 A I R 20060101
G06Q-0040/00 C I F B 20060101
G06Q-0040/00 C I R 20060101
ECLA: G06Q-040/00C
US Classification, Current Main: 705-036000, 705-03600R; Secondary: 705-026000, 706-016000
US Classification, Issued: 70536, 70536, 70526, 70616
File Segment: EngPI; EPI;
DWPI Class: T01; P74
Manual Codes (EPI/S-X): T01-J05A2A

29/5/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0013863433 - Drawing available
WPI ACC NO: 2004-041997/200404
XRPX Acc No: N2004-033969
Remotely controlled automatic optimization system in supermarket chain network, updates clip media display schedules to achieve optimal advertising time table without any additional input
Patent Assignee: MYR D (MYRD-I)
Inventor: MYR D
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20030220830	A1	20031127	US 2002115698	A	20020404	200404 B

Priority Applications (no., kind, date): US 2002115698 A 20020404

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030220830	A1	EN	30	15	

Alerting Abstract US A1

NOVELTY - The system includes an optimization server (3a), memory coupled to the CPU, automatic electronic advertising optimization system and self learning advertising optimization system. The self learning system updates the clip media display schedules in order to achieve an optimal advertising time table in a large retail network without any additional input.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.product supply and demand updating method;
2.communication network connecting multiple retail nodes;
3.intranet secure network communication system;
4.networked store display units;
5.department and product display matching system; and
6.clip promotion display influence curves estimating system.

USE - For point of purchase (POP) advertising in supermarket chain networks to maximize the in-store net profit by customized script generated clip promotion.

ADVANTAGE - Enables the optimization system to effectively control and automatically feature target advertising to a large number of display nodes in supermarket chain method.

DESCRIPTION OF DRAWINGS - The figure shows the block diagram of the remotely controlled automatic optimization system.

2 data mining engine
3 sales profit optimization apparatus
3a optimization server
4 client access control module
5 display system

Title Terms/Index Terms/Additional Words: REMOTE; CONTROL; AUTOMATIC; OPTIMUM; SYSTEM; SUPERMARKET; CHAIN; NETWORK; UPDATE; CLIP; MEDIUM; DISPLAY; SCHEDULE; ACHIEVE; ADVERTISE; TIME; TABLE; ADD; INPUT

Class Codes
International Classification (Main): G06F-017/60
ECLA: G06Q-010/00C, G06Q-030/00A
US Classification, Current Main: 705-010000; Secondary: 705-014000
US Classification, Issued: 70510, 70514
File Segment: EPI;
DWPI Class: T01; T05
Manual Codes (EPI/S-X): T01-J16C2; T01-N01A2A; T01-N01A2C; T01-N01D; T05-L01D; T05-L01X

29/5/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0013635435 - Drawing available
WPI ACC NO: 2003-731172/200369
Related WPI Acc No: 2008-C46203
XRPX Acc No: N2003-584483
Business item price elasticity calculating method, involves selecting demand model from evaluated demand models based on accessing of demand data to calculate price elasticity of items
Patent Assignee: I2 TECHNOLOGIES INC (ITWO-N); I2 TECHNOLOGIES US INC (ITWO-N)
Inventor: IVANOV B; KALYAN V; RANJAN S
Patent Family (5 patents, 3 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 20030177103	A1	20030918	US 2002365067	P	20020314	200369	B
			US 2002279182	A	20021023		
DE 10311311	A1	20031023	DE 10311311	A	20030314	200377	E
TW 200306482	A	20031116	TW 2003103308	A	20030218	200557	E
TW 234724	B1	20050621	TW 2003103308	A	20030218	200649	E
US 7343355	B2	20080311	US 2002279182	A	20021023	200820	E

Priority Applications (no., kind, date): US 2002365067 P 20020314; US 2002279182 A 20021023

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030177103	A1	EN	14	7	Related to Provisional US 2002365067
TW 200306482	A	ZH			
TW 234724	B1	ZH			

Alerting Abstract US A1

NOVELTY - The method involves accessing demand data of items to evaluate demand models generated by an optimizer (28). A demand model of the evaluated demand models is selected based on the evaluation of the model. A demand analytics module (36) calculates price elasticity based on the selected demand model.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.a system for calculating price elasticity of items

2.a software encoded in media to calculate price elasticity.

USE - Used for calculating price elasticity of businesses items e.g products, goods.

ADVANTAGE - The utilization of different demand models helps to determine price elasticity e accurately, thereby maximizing profits and maintaining consistent pricing of the items.

DESCRIPTION OF DRAWINGS - The drawing shows a system for generating an optimized pricing plan for category of items.

20 Client system

24 Server system

28 Optimizer

36 Demand analytics module

40 Pre-processing module

Title Terms/Index Terms/Additional Words: BUSINESS; ITEM; PRICE; ELASTIC; CALCULATE; METHOD; SELECT; DEMAND; MODEL; EVALUATE; BASED; ACCESS; DATA

Class Codes

International Classification (Main): G06F-017/60

International Classification (+ Attributes)

IPC + Level	Value	Position	Status	Version
G06F-0017/00	A	I	R	20060101
G06G-0007/00	A	I	R	20060101
G06Q-0099/00	A	I	F B	20060101
G06F-0017/00	C	I	R	20060101
G06G-0007/00	C	I	R	20060101
G06Q-0099/00	C	I	F B	20060101

US Classification, Current Main: 705-400000

US Classification, Issued: 705400, 705400, 7051, 7057, 70510

File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2C; T01-S03

29/5/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0013632816 - Drawing available
WPI ACC NO: 2003-728499/200369
System for managing supply chain and operating method thereof
Patent Assignee: KIM H S (KIMH-I); OH T D (OHTD-I)
Inventor: KIM H S; OH T D
Patent Family (2 patents, 1 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
KR 2003046168	A	20030612	KR 200176623	A	20011205	200369 B
KR 418620	B	20040214	KR 200176623	A	20011205	200441 E

Priority Applications (no., kind, date): KR 200176623 A 20011205

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
KR 2003046168	A	KO	1	10	
KR 418620	B	KO			Previously issued patent KR 2003046168

Alerting Abstract KR A
NOVELTY - A system for managing a supply chain and an operating method thereof are provided to measure the uncertainty for marketing through cooperative demand analysis and estimation, to realize an optimum supply plan considering a supply price condition and mass-customization, and to realize the optimum supply distribution to minimize an opportunity loss through sales analysis and a distribution plan.
DESCRIPTION - The system comprises an operation server including various kinds of sub systems for the demand analysis and estimation of a product, the supply plan, and the sales analysis and distribution, a system operator computer terminal(20) linking with the operation server, and a plurality of shop computer terminals(301-30n) inputting various kinds of data through the Internet network in order to make the operation server performs the demand analysis and estimation, the supply plan, and the sales analysis and distribution. The operation server comprises a cooperative demand analysis and estimation sub system(12), a cooperative supply plan sub system(14), a sales analysis and distribution sub system(16), and a graphic user Internet(18).

Title Terms/Index Terms/Additional Words: SYSTEM; MANAGE; SUPPLY; CHAIN; OPERATE; METHOD

Class Codes
International Classification (Main): G06F-017/60
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2B; T01-N01A; T01-N01A2; T01-N01A2B

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 29/5/15     (Item 15 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0013033609  - Drawing available
WPI ACC NO: 2003-112574/200310
Related WPI Acc No: 2003-111136; 2003-786738; 2006-686964
XRPX Acc No: N2003-089622
Interface for merchandise promotion optimization e.g. for web-based
systems, where clients and suppliers access a centralized network
operations center in order to perform optimizations
Patent Assignee: DEMAND TEC INC  (DEMA-N); DEMANDTEC INC  (DEMA-N)
Inventor: DELURGIO P; NEAL M
Patent Family (6 patents,  98 countries)
Patent                          Application
Number          Kind   Date     Number          Kind   Date     Update
WO 2003001321    A2  20030103  WO 2002US14977   A  20020425  200310  B
US 20030110072   A1  20030612  US 2001849448    A  20010504  200340  E
EP 1386213       A2  20040204  EP 2002734379    A  20020425  200410  E
                               WO 2002US14977   A  20020425
AU 2002305549    A1  20030108  AU 2002305549    A  20020425  200460  E
AU 2002305549    A8  20051020  AU 2002305549    A  20020425  200615  E
US 7092896       B2  20060815  US 2001849448    A  20010504  200654  E

Priority Applications (no., kind, date): US 2001849448  A  20010504

Patent Details
Number         Kind  Lan   Pg  Dwg  Filing Notes
WO 2003001321    A2  EN    45   22
National Designated States,Original:  AE AG AL AM AT AU AZ BA BB BG BR BY
   BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID
   IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ
   NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ
   VN YU ZA ZM ZW
Regional Designated States,Original:  AT BE CH CY DE DK ES FI FR GB GR IE
   IT LU MC NL PT SE TR
EP 1386213       A2  EN             PCT Application  WO 2002US14977
                                    Based on OPI patent   WO 2003001321
Regional Designated States,Original:  AL AT BE CH CY DE DK ES FI FR GB GR
   IE IT LI LT LU LV MC MK NL PT RO SE SI TR
AU 2002305549    A1  EN             Based on OPI patent   WO 2003001321
AU 2002305549    A8  EN             Based on OPI patent   WO 2003001321

  Alerting Abstract WO A2
  NOVELTY - The interface includes a scenario/results processor that
enables a user to prescribe an optimization scenario, and that presents the
optimum promotion plan to the user. The scenario/results
processor has an input/output processor and a scenario controller. The
input/output processor acquires data corresponding to the optimization
scenario from the user, and distributes optimization results to the user.
The scenario controller is coupled to the input/output processor. The
scenario controller controls the acquisition of the data and the
distribution of the optimization results.
  DESCRIPTION - INDEPENDENT CLAIM included for the following:method
  USE - For web-based systems.
  ADVANTAGE - Provides a superior technique for configuring an
optimization scenario, determining an optimum promotion
```

strategy for products within a product category, and for displaying the optimum promotion strategy. The present invention can be optimized to maximize merchandising figures of merit (e.g. net profit) that take into account demand chain costs associated with the products.
  DESCRIPTION OF DRAWINGS - The diagram shows the interface for merchandise promotion plan optimization
  233 scenario/results processor
  234 optimization engine

Title Terms/Index Terms/Additional Words: INTERFACE; MERCHANDISE; PROMOTE; OPTIMUM; WEB; BASED; SYSTEM; CLIENT; SUPPLY; ACCESS; CENTRE; NETWORK; OPERATE; ORDER; PERFORMANCE

Class Codes
International Classification (Main): G06F, G06F-017/60
International Classification (+ Attributes)
IPC + Level Value Position Status Version
  G06Q-0030/00 A I R 20060101
  G06Q-0099/00 A I F B 20060101
  G06Q-0030/00 C I R 20060101
  G06Q-0099/00 C I F B 20060101
ECLA: G06Q-030/00A
US Classification, Current Main: 705-010000; Secondary: 705-400000
US Classification, Issued: 70510, 70510, 705400
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-N01A2C; T01-N01A2E; T01-N03A

29/5/16 (Item 16 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0012969300 - Drawing available
WPI ACC NO: 2003-046585/200304
XRPX Acc No: N2003-036765
Product life cycle management method e.g. for computer, involves generating procurement plan to optimize selected objective based on selected subset of demand levels giving non-zero pre-existing inventory of selected products
Patent Assignee: BEYER D (BEYE-I); JAIN S (JAIN-I); SAFAI F (SAFA-I); SANTOS C A (SANT-I)
Inventor: BEYER D; JAIN S; SAFAI F; SANTOS C A
Patent Family (1 patents, 1 countries)
Patent Application
Number Kind Date Number Kind Date Update
US 20020143665 A1 20021003 US 2001756337 A 20010106 200304 B

Priority Applications (no., kind, date): US 2001756337 A 20010106

Patent Details
Number Kind Lan Pg Dwg Filing Notes
US 20020143665 A1 EN 20 12
  Alerting Abstract US A1
  NOVELTY - A product having common portions is selected. An objective of either maximizing gross profit or minimizing write of cost is chosen for the selected product. A procurement plan is generated to

optimize the selected objective based on the selected subset of
demand levels giving a non-zero pre-existing inventory of the selected products.
  USE - For managing product life e.g. for computer, computer peripherals.
  ADVANTAGE - Manages product life over the end of life horizon
effectively.
  DESCRIPTION OF DRAWINGS - The figure shows input/output data for the end
of life optimization apparatus.

Title Terms/Index Terms/Additional Words: PRODUCT; LIFE; CYCLE; MANAGEMENT;
  METHOD; COMPUTER; GENERATE; PLAN; OPTIMUM; SELECT; OBJECTIVE; BASED;
  SUBSET; DEMAND; LEVEL; NON; ZERO; PRE; EXIST; INVENTORY

Class Codes
International Classification (Main): G06F-017/60
ECLA: G06Q-010/00C
US Classification, Current Main: 705-028000
US Classification, Issued: 70528
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A

 29/5/17   (Item 17 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0012935220 - Drawing available
WPI ACC NO: 2003-011814/200301
Method for servicing portfolio of financial product using internet
Patent Assignee: HD PORTECH CO LTD (HDPO-N)
Inventor: KO S C
Patent Family (1 patents, 1 countries)
Patent   Application
Number   Kind   Date   Number   Kind   Date   Update
KR 2002049782   A   20020626 KR 200079068   A 20001220 200301 B

Priority Applications (no., kind, date): KR 200079068   A 20001220

Patent Details
Number   Kind Lan   Pg Dwg Filing Notes
KR 2002049782   A   KO   1   10

  Alerting Abstract KR A
  NOVELTY - A method for servicing a portfolio of a financial product using
the Internet is provided to rationally operate the user's property by
displaying a portfolio capable of increasing profits for
customers on the basis of interests, taxes and earning rates of
various financial products in case that the user selects a
financial product portfolio service.
  DESCRIPTION - A user inputs personal information to a customer response
system of a property management system in a PC. The user's ID and password
are searched from a database. It is judged whether the user is a member.
After that, the user inputs information related to fund employment of
customers. The information and financial products are analyzed and
classified. Results analyzed and classified are transmitted to a
searching/processing system. It is judged whether the user selects a
financial product portfolio. In case that the user selects the portfolio,

the portfolio capable of increasing profits of the customers is displayed on the basis of interests, taxes and earning rates of various financial products. In case that the user selects an investment strategy, the optimal product is extracted. Information on the progress of earning rates for the portfolio selected by the user is estimated.

Title Terms/Index Terms/Additional Words: METHOD; SERVICE; PORTFOLIO; FINANCIAL; PRODUCT

Class Codes
International Classification (Main): G06F-017/60
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A

29/5/20 (Item 20 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0012715144 - Drawing available
WPI ACC NO: 2002-566891/200260
XRPX Acc No: N2002-448718
System for allocating supply of critical material components and manufacturing capacity has database containing information related to component, information describing supply and changes to supply
Patent Assignee: MANUGISTICS INC (MANU-N)
Inventor: HORNE M
Patent Family (7 patents, 100 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2002060235	A2	20020808	WO 2002US2371	A	20020129	200260	B
EP 1364327	A2	20031126	EP 2002707588	A	20020129	200380	E
			WO 2002US2371	A	20020129		
AU 2002241987	A1	20020812	AU 2002241987	A	20020129	200427	E
TW 578071	A	20040301	TW 2002101503	A	20020129	200457	E
JP 2004537772	W	20041216	JP 2002560446	A	20020129	200482	E
			WO 2002US2371	A	20020129		
AU 2002241987	A8	20051006	AU 2002241987	A	20020129	200612	E
US 7058587	B1	20060606	US 2001264321	P	20010129	200638	E
			US 200257983	A	20020129		

Priority Applications (no., kind, date): US 2001264321 P 20010129; US 200257983 A 20020129

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2002060235	A2	EN	100	9	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
Regional Designated States,Original: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

EP 1364327	A2	EN			PCT Application WO 2002US2371

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                                        Based on OPI patent    WO 2002060235
Regional Designated States,Original:  AL AT BE CH CY DE DK ES FI FR GB GR
   IE IT LI LT LU LV MC MK NL PT RO SE SI TR
AU 2002241987    A1  EN             Based on OPI patent    WO 2002060235
TW 578071        A   ZH
JP 2004537772    W   JA   162       PCT Application  WO 2002US2371
                                    Based on OPI patent    WO 2002060235
AU 2002241987    A8  EN             Based on OPI patent    WO 2002060235
US 7058587       B1  EN             Related to Provisional  US 2001264321
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Alerting Abstract WO A2

NOVELTY - A database contains information related to a component, the information describing the supply and changes to the supply. A supply planner (200) may produce a supply plan using synchronized allocation.

DESCRIPTION - A resource optimizer (RESO) (300) requires a supply plan from the supply planner (200) (that is, the contents of a base netting table or a separately defined netting table) as its basic input. The RESO may also uses the data from other tables specified by the user, such as the Product Structure (PS), Customer Orders (CO), Master Schedule (MS), and Extra Usage (EU) tables described above. The RESO (300) stores this data in tables in the database, such as a Resource Optimization table and a resource optimization detail (RESOD) table.

INDEPENDENT CLAIMS are included for:

1.a method of allocating a supply of component
2.a program storage device readable my a machine

USE - For optimizing the supply of critical material components and manufacturing capacity in an automated electronic environment.

ADVANTAGE - The user can balance constrained material needs against production or current supplier commitments and evaluate potential shortages for substitution. The supply system and method explore substitution and allocation alternatives simultaneously in real-time and contact supplier alternatives via the Internet for availability. The user can scan purchasing alternatives and rules for cost reduction opportunities and automatically incorporate the resulting decisions into appropriate planning and enterprise transaction systems. Allows dynamic material substitutions and allocations, and enables more profitable use of constrained materials.

DESCRIPTION OF DRAWINGS - The drawing illustrates a block diagram of a supply allocation system in accordance with an embodiment of the present invention.

200 supply planner
300 resource optimizer

Title Terms/Index Terms/Additional Words: SYSTEM; ALLOCATE; SUPPLY; CRITICAL; MATERIAL; COMPONENT; MANUFACTURE; CAPACITY; DATABASE; CONTAIN; INFORMATION; RELATED; DESCRIBE; CHANGE

Class Codes
International Classification (Main): G05B-019/418, G06F-017/60
International Classification (+ Attributes)
IPC + Level Value Position Status Version
G05B-0019/418 A I F R 20060101
G06F-0017/10 A I L R 20060101
G06F-0017/60 A I F B 20051231
G06Q-0010/00 A I R 20060101
G06Q-0050/00 A I L R 20060101

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  G05B-0019/418  C  I  F  R  20060101
  G06F-0017/10  C  I  L  R  20060101
  G06Q-0010/00  C  I     R  20060101
  G06Q-0050/00  C  I  L  R  20060101
ECLA: G06Q-010/00C, G06Q-050/00B
US Classification, Current Main: 705-007000; Secondary: 705-008000
US Classification, Issued: 7057, 7058

JP Classification
  FI Term           Facet Rank Type
G05B-019/418       Z
G06F-017/10        Z
G06F-017/60    108

F-Term  View Point  Additional
 Theme   + Figure   Code
 3C100
 5B049
 5B056
 3C100     AA05
 3C100     AA16
 3C100     AA22
 3C100     BB05
 3C100     BB17
 3C100     BB36
 5B056     BB91

File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2B; T01-J05B4P; T01-S03



 29/5/21     (Item 21 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0010958379  - Drawing available
WPI ACC NO: 2001-581567/200165
XRPX Acc No: N2001-433262
Reliability determining method for investment fund allocating system,
involves determining standard deviation of tertiary factor for set of
secondary factors, using correlations between secondary and tertiary
factors
Patent Assignee: HUNTER B A  (HUNT-I); KACHANI S  (KACH-I); STRATEGIC
  CAPITAL ALLOCATION GROUP  (STRA-N); STRATEGIC CAPITAL NETWORK LLC
  (STRA-N)
Inventor: HUNTER B A; KACHANI S
Patent Family (10 patents,  31 countries)
Patent                          Application
Number          Kind   Date     Number          Kind   Date     Update
WO 2001053998    A1  20010726  WO 2001US636     A  20010109  200165  B
EP 1248997       A1  20021016  EP 2001942749    A  20010109  200276  E
                               WO 2001US636     A  20010109
BR 200107495     A   20030114  BR 20017495      A  20010109  200309  E
                               WO 2001US636     A  20010109
KR 2002079777    A   20021019  KR 2002708914    A  20020710  200316  E
US 20030046212   A1  20030306  WO 2001US636     A  20010109  200320  E
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			US 200118696	A	20011213			
TW 493130	A	20020701	TW 2001100515	A	20010309	200329	E	
CN 1395706	A	20030205	CN 2001803596	A	20010109	200334	E	
JP 2003521043	W	20030708	JP 2001554224	A	20010109	200347	E	
			WO 2001US636	A	20010109			
IN 200200835	P2	20060127	WO 2001US636	A	20010109	200623	E	
			IN 2002KN835	A	20020621			
KR 2007120199	A	20071221	WO 2001US636	A	20010109	200837	E	
			KR 2007727205	A	20071122			

Priority Applications (no., kind, date): US 2000175261 P 20000110; US 200118696 A 20011213

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2001053998	A1	EN	26	4	
National Designated States,Original: BR CA CN IL IN JP KR MA SG US					
Regional Designated States,Original: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR					
EP 1248997	A1	EN			PCT Application WO 2001US636
					Based on OPI patent WO 2001053998
Regional Designated States,Original: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR					
BR 200107495	A	PT			PCT Application WO 2001US636
					Based on OPI patent WO 2001053998
US 20030046212	A1	EN			PCT Application WO 2001US636
TW 493130	A	ZH			
JP 2003521043	W	JA	29		PCT Application WO 2001US636
					Based on OPI patent WO 2001053998
IN 200200835	P2	EN			PCT Application WO 2001US636
KR 2007120199	A	KO			PCT Application WO 2001US636
					Based on OPI patent WO 2001053998

Alerting Abstract WO A1

NOVELTY - Data concerning a set of secondary factors are stored in memory and are used to determine correlation between the secondary factors with regard to a tertiary factor. Standard deviation of tertiary factor for the set is determined using the correlation. Reliability with regard to primary factor is determined using the primary factor and standard deviation.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.Primary factor optimizing method;

2.Investment funds allocating method

USE - For designers of mechanical, electrical and electronic systems. For investment funds allocating systems.

ADVANTAGE - A real option function is used in a linear or non-linear optimization program to determine an allocation of investment funds among a set of asset classes for a period of time which maximizes the value of the set of asset classes over the period of time. Provides a constraint for linear or non-linear optimization programs, which specifies a minimum reliability for the return on the asset classes with regard to the risks associated with the assets.

DESCRIPTION OF DRAWINGS - The figure shows the block diagram of investment funds allocating system.

```
Title Terms/Index Terms/Additional Words: RELIABILITY; DETERMINE; METHOD;
  INVESTMENT; FUND; ALLOCATE; SYSTEM; STANDARD; DEVIATE; TERTIARY; FACTOR;
  SET; SECONDARY; CORRELATE

Class Codes
International Classification (Main): G06F-017/30, G06F-017/60
 (Additional/Secondary): G06F-017/15, G06F-017/18, G06F-019/00
International Classification (+ Attributes)
IPC + Level Value Position Status Version
  G06F-0017/15  A  I  L  R  20060101            G06F-0017/15  C  I  L  R  20060101
  G06F-0017/18  A  I  L  R  20060101            G06F-0017/18  C  I  L  R  20060101
  G06F-0019/00  A  I  L  R  20060101            G06F-0019/00  C  I  L  R  20060101
  G06Q-0010/00  A  I  F  R  20060101            G06Q-0010/00  C  I  F  R  20060101
  G06Q-0040/00  A  I     R  20060101            G06Q-0040/00  C  I     R  20060101
  G06Q-0040/00  A  I  F  B  20060101            G06Q-0040/00  C  I     B  20060101
  G06Q-0090/00  A  I  L  R  20060101            G06Q-0090/00  C  I  L  R  20060101
ECLA: G06Q-040/00C, G06Q-040/00D
US Classification, Current Main: 705-03600R
US Classification, Issued: 70536

JP Classification
  FI Term           Facet Rank Type
G06F-017/15
G06F-017/18           D
G06F-017/60     168
G06F-017/60     204
G06F-017/60     516
G06F-019/00     120

F-Term  View Point  Additional
 Theme   + Figure   Code
 5B049
 5B055
 5B056
 5B056     BB22
 5B056     BB64

File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J03; T01-J04A; T01-J05A1; T01-J05A2; T01-J05B2;
  T01-J15A; T01-S01C


 29/5/22     (Item 22 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0010771461  - Drawing available
WPI ACC NO: 2001-385923/200141
XRPX Acc No: N2001-283506
Automatic bidding goods determining system for on-line auction, produces
gain obtained and goods list for maximum gain based on table which stores
goods price, relation and strategy information
Patent Assignee: NEC CORP  (NIDE)
Inventor: FUJITA S
Patent Family (3 patents,  2 countries)
Patent                        Application
```

Number	Kind	Date	Number	Kind	Date	Update	
JP 2001118011	A	20010427	JP 1999298374	A	19991020	200141	B
JP 3419365	B2	20030623	JP 1999298374	A	19991020	200341	E
US 7346571	B1	20080318	US 2000692455	A	20001020	200822	E

Priority Applications (no., kind, date): JP 1999298374 A 19991020

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
JP 2001118011	A	JA	24	25	
JP 3419365	B2	JA	24		Previously issued patent JP 2001118011

Alerting Abstract JP A

NOVELTY - The system (12) stores input goods strategy information (1), goods relation (2), commercial value, purchase cost (4) and price, in memory (8). A gain calculator (6) computes gain (10) for purchase of desired goods from price, strategy and commercial value information. A strategy calculator (7) produces goods list (11) to attain optimum gain based on output of gain calculator for combination of goods.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1.Automatic bidding goods determining method;
2.Automatic bid system;
3.Automatic bid procedure;
4.Bid support system;
5.Bid support procedure;
6.Recording medium storing bidding goods determining program

USE - For selecting goods for bidding for on-line auction in internet.

ADVANTAGE - Combination of goods that provide optimum gain to user is determined easily.

DESCRIPTION OF DRAWINGS - The figure shows the block diagram of the automatic bidding goods determining system. (Drawing includes non-English language text).

1 goods strategy information
2 Goods relation
4 Purchase cost
6 Gain calculator
7 Strategy calculator
8 Memory
10 Gain
11 Goods list
12 Automatic bidding goods determining system

Title Terms/Index Terms/Additional Words: AUTOMATIC; BID; GOODS; DETERMINE; SYSTEM; LINE; AUCTION; PRODUCE; GAIN; OBTAIN; LIST; MAXIMUM; BASED; TABLE ; STORAGE; PRICE; RELATED; STRATEGY; INFORMATION

Class Codes
International Classification (+ Attributes)

IPC + Level	Value	Position	Status	Version
G06F-0019/00	A	I	R	20060101
G06Q-0030/00	A	I L	R	20060101
G06Q-0040/00	A	I F	B	20060101
G06Q-0050/00	A	I F	R	20060101
G06Q-0090/00	A	I L	R	20060101

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  G06F-0019/00  C  I     R  20060101
  G06Q-0030/00  C  I  L  R  20060101
  G06Q-0040/00  C  I  F  B  20060101
  G06Q-0050/00  C  I  F  R  20060101
  G06Q-0090/00  C  I  L  R  20060101
US Classification, Issued: 70537, 70526, 70527, 70535, 70536, 70538, 70580

JP Classification
  FI Term            Facet Rank Type
G06F-015/28         B
G06F-017/60    148
G06F-017/60    316
G06F-017/60    516
G06F-017/60           ZEC

F-Term  View Point  Additional
 Theme   + Figure   Code
 5B049
 5B049     AA06
 5B049     BB36
 5B049     BB46
 5B049     CC05
 5B049     EE03
 5B049     GG02

File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A1



 29/5/25     (Item 25 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2010 Thomson Reuters. All rts. reserv.
0009814848  - Drawing available
WPI ACC NO: 2000-105171/200009
Related WPI Acc No: 2000-686107
XRPX Acc No: N2000-080798
Production planning method in uncertain demand environment
Patent Assignee: INT BUSINESS MACHINES CORP  (IBMC)
Inventor: CHENG F; CONNORS D P; ERVOLINA T R; SRINIVASAN R
Patent Family (1 patents,  1 countries)
Patent                          Application
Number          Kind   Date     Number         Kind   Date    Update
US 6006192       A   19991221  US 1997815825    A  19970312  200009  B

Priority Applications (no., kind, date): US 1997815825  A  19970312

Patent Details
Number         Kind  Lan   Pg  Dwg  Filing Notes
US 6006192       A   EN    16    8

  Alerting Abstract US A
  NOVELTY - The method involves providing multiple demand scenarios having
discrete time periods. An uncertainty in demand environment is
represented by scenario based-analysis based on which optimal deterministic
solution is output. Then, expected payoffs for demand scenarios are
```

computed and an optical production plan having specific payoffs is chosen according to which manufactured products are modified.
DESCRIPTION - An INDEPENDENT CLAIM is included for a computer program product.
USE - In material and labor planning in uncertain demand environment.
ADVANTAGE - Preserves the benefits of disparate aspect, while manifesting in combination of generics capability of qualitative advantage.
DESCRIPTION OF DRAWINGS - The figure illustrated view of canonical scenarios tree.

Title Terms/Index Terms/Additional Words: PRODUCE; PLAN; METHOD; DEMAND; ENVIRONMENT

Class Codes
International Classification (Main): G06F-015/00
(Additional/Secondary): G06F-015/21, G06F-015/22, G06F-015/46
ECLA: G06Q-010/00B
US Classification, Current Main: 705-007000; Secondary: 705-008000, 705-010000, 705-020000, 705-028000, 705-029000, 705-035000
US Classification, Issued: 7057, 70510, 70520, 70528, 70529, 70535, 7058
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-J05A2; T01-J16A; T01-S03

B. Patent Files, Full-Text

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File 349:PCT FULLTEXT 1979-2010/UB=20100128|UT=20100121
        (c) 2010 WIPO/Thomson
File 348:EUROPEAN PATENTS 1978-201004
        (c) 2010 European Patent Office

Set     Items   Description
S1      51788   (OPTIM? OR IDEAL OR BEST OR DESIRED OR DESIRABLE OR WANTED-
             )(5N)(PLAN OR PLANS OR PROGRAM OR PROGRAMS OR PROGRAMME OR PR-
             OGRAMMES OR SCHEME OR SCHEMES OR STRATEGY OR STRATEGIES)
S2     295929   (MULTIPLE OR MANY OR PLURALITY OR MULTITUDE OR SEVERAL OR -
             VARIOUS OR DIFFERENT OR ASSORTED)(5N)(PRODUCT OR PRODUCTS OR -
             ITEM OR ITEMS OR ARTICLE OR ARTICLES OR OBJECT OR OBJECTS OR -
             MERCHANDISE OR GOODS OR WARES)
S3       2636   (DEMAND OR DEMANDS OR NEED OR NEEDS)(5N)(UNCERTAIN? OR UNK-
             NOWN OR UNCLEAR OR UNDETERMINED OR "NOT"()(CERTAIN OR CLEAR OR
              KNOWN OR DETERMINED) OR VAGUE)
S4    2132323   TIME OR TIMES OR PERIOD OR PERIODS OR STAGE OR STAGES OR I-
             NTERVAL OR INTERVALS
S5    1255089   PRICE OR PRICES OR CLASS OR CLASSES OR GROUP OR GROUPS OR -
             FAMILY OR FAMILIES OR CATEGORY OR CATEGORIES
S6     250783   (EXCEED? OR SURPASS? OR PASS? OR (GO OR GOING OR GOES OR W-
             ENT)()(OVER OR ABOVE OR BEYOND))(10N)(ALLOCATION OR ALLOCATIO-
             NS OR VOLUME OR VOLUMES OR QUANTITY OR QUANTITIES OR AMOUNT OR
              AMOUNTS OR NUMBER OR NUMBERS OR DISTRIBUTION OR DISTRIBUTIONS
              OR INVENTORY OR INVENTORIES)
S7     981720   STOCHASTIC? OR RANDOM? OR PROBAB? OR VARIAB? OR UNCERTAIN?
            OR LIKELIHOOD?
S8      21430   (MAXIMIZ? OR MAXIMIS? OR INCREAS? OR BUILD?)(10N)(REVENUE?
```

```
            OR INCOME? OR RETURN OR RETURNS OR PROFIT OR PROFITS)
S9      191474   (BID OR BIDS OR OFFER OR OFFERS OR ORDER OR ORDERS OR REQU-
            EST OR REQUESTS)(5N)(ACCEPT? OR RECEIV? OR TAKE? OR TAKING)
S10          0   AU=( KALAGNANM J? OR KALAGNANM, J? OR KALAGNANM (2N)(J OR -
            JAYANT))
S11          1   AU=( KALAGNANAM J? OR KALAGNANAM, J? OR KALAGNANAM (2N)(J -
            OR JAYANT))
S12          0   AU=( MOHANTY M? OR MOHANTY, M? OR MOHANTY (2N)(M OR MONALI-
            SA))
S13          0   AU=( PARIJA G? OR PARIJA, G? OR PARIJA (2N)(G OR GYANA))
S14       198    S1(S)S8
S15        98    S14(S)(S2 OR S3 OR S6 OR S7 OR S9)
S16        69    S15 AND IC=(G06F OR G06Q)
S17        32    S15 AND IC=(G06F-017/60 OR G06F-0017/60 OR G06Q-040/00 OR -
            G06Q-0040/00)
S18        61    S3(S)S9
S19         9    S18 AND IC=(G06F-017/60 OR G06F-0017/60 OR G06Q-040/00 OR -
            G06Q-0040/00)
S20        18    S1(S)S2(S)S3
S21         9    S20 AND IC=(G06Q OR G06F)
S22        47    S18(S)(S2 OR S4 OR S5 OR S6 OR S7 OR S8)
S23        22    S22 AND IC=(G06F OR G06Q)
S24        27    S1(S)S3(S)S7
S25        17    S24 AND IC=(G06Q OR G06F)
S26        50    S2(S)S3(S)S7
S27        37    S26(S)S4
S28        18    S27 AND IC=(G06Q OR G06F)
S29        66    S17 OR S19 OR S21 OR S23 OR S25 OR S28
S30        56    S29 AND AY=1950:2003
S31        34    S30 AND IC=(G06F-017/60 OR G06F-0017/60 OR G06Q-040/00 OR -
            G06Q-0040/00)


31/3,K/1     (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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01236814
METHOD AND APPARATUS FOR CREATING AND EVALUATING STRATEGIES
PROCEDE ET APPAREIL PERMETTANT DE CREER ET D'EVALUER DES STRATEGIES
Patent Applicant/Assignee:
  FAIR ISAAC CORPORATION, 901 Marquette Avenue, Suite 3200, Minneapolis, MN
    55402, US, US (Residence), US (Nationality), (For all designated states
    except: US)
Inventor(s):
  CAPLAN Scott Malcolm, 6735 Ulster Court, Alpharetta, GA 30005, US,
  CHANG Yen Fook, 72 Huntleigh Road, Piedmont, CA 94611, US,
  COHEN Michael Raymond, 242 Lakeshore Court, Richmond, CA 94804, US,
  CRAWFORD Stuart, 141 St. James Drive, Piedmont, CA 94611, US,
  DEL FAVERO Brendan, 1414 Farragut Circle, Davis, CA 95616, US,
  FAHNER Gerald, 819 Diablo Avenue #28, Novato, CA 94947, US,
  FUNG Robert Mun-Cheong, 2817 Almeria Street, Davis, CA 95616, US,
  HOADLEY Arthur Bruce, 2921 Regent Street, Berkeley, CA 94705, US,
  HUA Jun, 30 Via Holon Street #11, Greenbrae, CA 94904, US,
  LYONS Chisoo S, 329 Forbes Avenue, San Rafael, CA 94901, US,
  PERLIS John, 419 D Street, Petaluma, CA 94952, US,
  SHIKALOFF Nina, 4 Knight Drive, San Rafael, CA 94901, US,
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SULLIVAN Gary, 4330-21st Street, San Francisco, CA 94114, US,
THAKER Aush, 2298 Pheasant Drive, Hercules, CA 94547, US,
WELLS Eric C, 1514 Virginia Street, Berkeley, CA 94703, US,
Legal Representative:
GLENN Michael A (et al) (agent), Glenn Patent Group, 3475 Edison Way, Ste. L., Menlo Park, CA 94025, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200543331 A2-A3 20050512 (WO 0543331)
Application: WO 2004US36149 20041029 (PCT/WO US04036149)
Priority Application: US 2003697907 20031029
Designated States:
(All protection types applied unless otherwise stated - for applications 2004+)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 47196
Main International Patent Class (v7): G06F-017/60
Fulltext Availability:
Detailed Description

Detailed Description
... specification of nonrandom strategies, wherein similar or identical accounts are guaranteed to receive the same treatment.

AN EXEMPLARY UNCERTAINTY ESTIMATOR
What is to be accomplished?
Strategies are often optimized in order to maximize the amount of profit an institution $100 profit per account" but most would be surprised if after a year's time that the results were exactly $100. It is more reasonable to explain...

...an average profit per account as low as $90 or as high as $110." Herein below this discussion describes a methodology developed to estimate the uncertainty around estimates of future outcomes.
A decision-maker considers uncertainty for a variety of reasons as follows. Any estimate of the future carries some uncertainty...

...uncertainty. It is not as likely that such sources can be unbundled so cleanly this way.

1 5 Occasionally an analyst is interested in the uncertainty at the individual level. This might be necessary if the analyst wants to switch to maximizing a different objective function. As an example, rather than determining the strategy to maximize total profit, e.g. P= Y P, , it may be desired to choose to maximize total risk-adjusted all individuals i profit, e.g. P = J(Pi-A*q), where ui captures the uncertainty for each

all individuals i
individual in that individual's profit estimate and Z is chosen by the analyst to specify the amount of discounting for uncertainty desired. The analyst then needs to calculate (7i for each individual (and perhaps for each (possible action). In this case, Stage Two is modified (1) to ignore portfolio composition and...

...1A across the 200 estimates. This would then be output as an extra column on the sample dataset, so that the analyst could develop an optimal strategy which maximizes risk-adjusted profit...

31/3,K/4 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2010 WIPO/Thomson. All rts. reserv.
01127283 **Image available**
CONFIGURABLE PRICING OPTIMIZATION SYSTEM
SYSTEME D'OPTIMISATION DES PRIX CONFIGURABLE
Patent Applicant/Assignee:
MANUGISTICS ATLANTA INC, 9715 Key West Avenue, Rockville, MD 20850, US, US (Residence), US (Nationality)
Inventor(s):
COOKE Mark, Manugistics Atlanta, Inc., Overlook II, Suite 1000, 2839 Paces Ferry Road, SE, Atlanta, GA 30339, US,
Legal Representative:
CROWSON Celine Jimenez (et al) (agent), Hogan & Hartson L.L.P., 555 Thirteenth Street, N.W., Washington, DC 20004, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200449125 A2-A3 20040610 (WO 0449125)
Application: WO 2003US37601 20031126 (PCT/WO US03037601)
Priority Application: US 2002428912 20021126
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 19139
Main International Patent Class (v7): G06F-017/60
Fulltext Availability:
Detailed Description

Detailed Description
... IA, the present invention provides a promotion pricingsystem100forproducingandevaluatingpromotionpricingstrategies. In particular, a user may employ the present invention to evaluate historical data to determine a more ideal promotional strategy to accomplish various business goals, such as increasing

total sales volumes or increasing sales in certain desired market segments. The promotion pricing system functions to...

...expected effect of a promotional policy provided by the user. The promotion pricing 1 5 system 100 works by defining the market by specifying the various products in the market, as well as the suppliers (i.e., sellers in the market) and demanders (i.e., consumers). The promotion pricing system 1 00 then looks to historical market data to create a market model which may be used to determine various information, such as profit or sales maximizing conditions....

31/3,K/7 (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2010 WIPO/Thomson. All rts. reserv.
00977103 **Image available**
SYSTEM AND METHOD FOR MANAGING TRANSPORTATION DEMAND AND CAPACITY
SYSTEME ET PROCEDE POUR LA GESTION DE DEMANDE ET DE CAPACITE EN MATIERE DE TRANSPORTS
Patent Applicant/Assignee:
SCHNEIDER LOGISTIC INC, 3101 South Packerland Drive, Green Bay, WI 54306-2545, US, US (Residence), US (Nationality)
Inventor(s):
CLARKE Lloyd, 433 E. Fox Run Circle, Green Bay, WI 54302, US,
GAMBLE A Bruce, 3026 Manitowoc Road, Green Bay, WI 54311, US,
JANCIK-BAILEY Jennifer, 1726 Grace Street, De Pere, WI 54115, US,
ORCHARD Ryan, 13324 - 106A Avenue, Edmonton, AB T5N1C2, CA,
Legal Representative:
PENNINGTON Edward A (et al) (agent), Swidler Berlin Shereff Friedman, LLP, Suite 300, 3000 K Street, N.W., Washington, D.C. 20007-5116, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200307089 A2-A3 20030123 (WO 0307089)
Application: WO 2002US21601 20020710 (PCT/WO US0221601)
Priority Application: US 2001902577 20010712
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AU BG BR CA CN CZ HU IL IN JP KR MN MX NO NZ PL RU SG SK VN YU ZA
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 5908

Main International Patent Class (v7): G06F-017/60
Fulltext Availability:
Detailed Description

Detailed Description
... arc represents a feasible lane from an origin node at a given time, to a destination node at another given time. Each arc has a variable associated with the arc. The variable for the arc represents flow, the number of trucks to be moved on that lane during that time period. The linear program includes constraints at...i.e. freight that the

carrier has already agreed to ship. Each arc has an associated average revenue and average cost. By solving the linear program, the optimal values of the variables can be determined. The optimal values of the variables represent the number of loads to ship for each arc to maximize profits, subject to the constraints....

31/3,K/8 (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2010 WIPO/Thomson. All rts. reserv.
00971320 **Image available**
INTERFACE FOR MERCHANDISE PROMOTION OPTIMIZATION
INTERFACE D'OPTIMISATION POUR LA PROMOTION DE MARCHANDISES
Patent Applicant/Assignee:
DEMANDTEC INC, Suite 200, 1 Circle Star Way, San Carlos, CA 94070, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
DELURGIO Phil, 601 Tarrytown Court, Walnut Creek, CA 94598, US, US (Residence), US (Nationality), (Designated only for: US)
NEAL Michael, 2745 Lake Street, San Francisco, CA 94121, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
HUFFMAN James W (agent), Huffman Law Group, 1832 N. Cascade Avenue, Colorado Springs, CO 80907, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200301321 A2-A3 20030103 (WO 0301321)
Application: WO 2002US14977 20020425 (PCT/WO US0214977)
Priority Application: US 2001849448 20010504
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
Publication Language: English
Filing Language: English
Fulltext Word Count: 9591
Main International Patent Class (v7): G06F-017/60
Fulltext Availability:
Detailed Description

Detailed Description
... type of optimization that is being performed.

The price optimization tool 304 is employed to determine a set of optimum prices for products of a product category comprising a plurality of demand groups. The promotion optimization tool 306 is employed to determine an optimum promotion strategy for products of a product category comprising a plurality of demand groups. The space tool 308 is employed to determine an optimum placement strategy within stores for products of a product category comprising a plurality of demand groups. The logistics tool 3 1 0 is employed to determine an optimum inventory strategy within stores for products of a product category

comprising a plurality of demand groups. And the assortment tool 312 is employed to determine an optimum mix of products of a product category comprising a plurality of demand groups. Each of the tools 304, 306, 308, 310, 312 include provisions for determining optimum lever parameters for the maximization of cost-based merchandising figures of merit such as net profit. In one embodiment, the optimization engine 300 comprises computer program modules coded for execution by an optimization analysis program such as GAMS& The results of an optimization are exported from the application program as tables into a data base server application such as MicrosoftO SQL Server....

31/3,K/18 (Item 18 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2010 WIPO/Thomson. All rts. reserv.
00806383
COLLABORATIVE CAPACITY PLANNING AND REVERSE INVENTORY MANAGEMENT DURING DEMAND AND SUPPLY PLANNING IN A NETWORK-BASED SUPPLY CHAIN ENVIRONMENT AND METHOD THEREOF
PLANIFICATION EN COLLABORATION DES CAPACITES ET GESTION ANTICIPEE DES STOCKS LORS DE LA PLANIFICATION DE L'OFFRE ET DE LA DEMANDE DANS UN ENVIRONNEMENT DE CHAINE D'APPROVISIONNEMENT FONDEE SUR LE RESEAU ET PROCEDE ASSOCIE
Patent Applicant/Assignee:
ACCENTURE LLP, 1661 Page Mill Road, Palo Alto, CA 94304, US, US (Residence), US (Nationality)
Inventor(s):
MIKURAK Michael G, 108 Englewood Blvd., Hamilton, NJ 08610, US,
Legal Representative:
HICKMAN Paul L (agent), Oppenheimer Wolff & Donnelly, LLP, 1400 Page Mill Road, Palo Alto, CA 94304, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200139029 A2 20010531 (WO 0139029)
Application: WO 2000US32309 20001122 (PCT/WO US0032309)
Priority Application: US 99444655 19991122; US 99444886 19991122
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 157840

Main International Patent Class (v7): G06F-017/60
Fulltext Availability:
Detailed Description

Detailed Description

... WAFIs fundamental configurability will allow a broad range of
competitive electronic commerce business models to flourish. It allows
business models to be
141
shaped to maximize revenues sources, end-user product value,
and operating efficiencies. WAF can ...the desired product is confirmed,
as are the price and shipping arrangements. As an option, the invention
may require the user to conflrm that the desired product or service
has been ordered, that the price is satisfactory, and that the desired
shipping provider is selected...

31/3,K/27 (Item 27 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2010 WIPO/Thomson. All rts. reserv.
00542296 **Image available**
COMPUTER-IMPLEMENTED VALUE MANAGEMENT TOOL FOR AN ASSET INTENSIVE MANUFACTURER
OUTIL DE GESTION DE VALEURS INFORMATISE POUR FABRICANT DE PRODUITS A FORTE CONCENTRATION D'ACTIFS
Patent Applicant/Assignee:
I2 TECHNOLOGIES INC,
KALYAN Vibhu K,
Inventor(s):
KALYAN Vibhu K,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200005669 A1 20000203 (WO 0005669)
Application: WO 99US16454 19990722 (PCT/WO US9916454)
Priority Application: US 9893709 19980722
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CU CZ CZ DE DE DK DK EE EE
ES FI FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS
LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM
TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ
MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ
CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 4020
Main International Patent Class (v7): G06F-017/60
Fulltext Availability:
Detailed Description

Detailed Description
... limited by insufficient machine capacity rather than by other
constraints.

Value management for asset intensive manufacturing is
based on the following principle: Based on future
uncertain demand for various products, expected
prices for those products, and available capacities of resources
during periods required to supply demand when demanded, a
value for each resource during those periods can be
calculated. The calculation results in threshold prices,
referred to as minimum acceptable values (MAVs) for a given demand period....

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 31/3,K/34     (Item 6 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00787121
System and method for controlling the number of units of parts in an
    inventory
System und Verfahren zur Kontrolle der Zahl von Teileinheiten in einem
    Inventar
Systeme et procede pour controler le nombre de pieces dans un inventaire
PATENT ASSIGNEE:
  Panduit Corp., (207750), 17301 Ridgeland Avenue, Tinley Park IL 60477,
    (US), (Proprietor designated states: all)
INVENTOR:
  Caveney, Jack, 546 Dalewood Lane, Hinsdale, Illinois 60521, (US)
  Winger, James, 7911 Joliet Drive North, Tinley Park, Illinois 60477, (US)
LEGAL REPRESENTATIVE:
  Grunecker, Kinkeldey,  Stockmair & Schwanhausser Anwaltssozietat (100721)
    , Maximilianstrasse 58, 80538 Munchen, (DE)
PATENT (CC, No, Kind, Date):  EP 733986  A2  960925 (Basic)
                              EP 733986  A3  970702
                              EP 733986  B1  010912
APPLICATION (CC, No, Date):   EP 96104609 960322;
PRIORITY (CC, No, Date): US 410342 950324
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; IT; LI; NL; SE
INTERNATIONAL PATENT CLASS (V7): G06F-017/60
ABSTRACT WORD COUNT: 236
NOTE:  Figure number on first page: 2
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text  Language    Update    Word Count
      CLAIMS A  (English)  EPAB96     5449
      CLAIMS B  (English)  200137     1377
      CLAIMS B   (German)  200137     1274
      CLAIMS B   (French)  200137     1538
      SPEC A    (English)  EPAB96     5555
      SPEC B    (English)  200137     4736
Total word count - document A        11005
Total word count - document B         8925
Total word count - documents A + B   19930

INTERNATIONAL PATENT CLASS (V7): G06F-017/60

...SPECIFICATION methods are also problematic because they are time, labor,
  and cost-intensive.
    US-A-5,287,267 discloses methods for parts procurement quantity
  determination where demand is uncertain for the product in
  which the parts are used. It is recommended to order parts for products
  on the basis of demand forecasts for each product in a
  plurality of time periods. The expected excess
  inventory is to be minimized while the specified service level is to be
  achieved.
    "A multi-item maintenance center inventory model for...
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IV. Text Search Results from Dialog

A. NPL Files, Abstract

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File  35:Dissertation Abs Online 1861-2010/Dec
         (c) 2010 ProQuest Info&Learning
File 474:New York Times Abs 1969-2010/Feb 03
         (c) 2010 The New York Times
File 475:Wall Street Journal Abs 1973-2010/Feb 03
         (c) 2010 The New York Times
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 Gale/Cengage
File  65:Inside Conferences 1993-2010/Feb 02
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         (c) 2010 The HW Wilson Co.
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File  14:Mechanical and Transport Engineer Abstract 1966-2010/Dec
         (c) 2010 CSA.
File   6:NTIS 1964-2010/Feb W1
         (c) 2010 NTIS, Intl Cpyrght All Rights Res
File   8:Ei Compendex(R) 1884-2010/Jan W4
         (c) 2010 Elsevier Eng.  Info. Inc.
File  34:SciSearch(R) Cited Ref Sci 1990-2010/Jan W4
         (c) 2010 The Thomson Corp
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 2006 The Thomson Corp
File   7:Social SciSearch(R) 1972-2010/Jan W4
         (c) 2010 The Thomson Corp
File  95:TEME-Technology & Management 1989-2010/Dec W4
         (c) 2010 FIZ TECHNIK
File  18:Gale Group F&S Index(R) 1988-2010/Jan 01
         (c) 2010 Gale/Cengage

Set     Items   Description
S1     276533   (OPTIM? OR IDEAL OR BEST OR DESIRED OR DESIRABLE OR WANTED-
             )(5N)(PLAN OR PLANS OR PROGRAM OR PROGRAMS OR PROGRAMME OR PR-
             OGRAMMES OR SCHEME OR SCHEMES OR STRATEGY OR STRATEGIES)
S2     351074   (MULTIPLE OR MANY OR PLURALITY OR MULTITUDE OR SEVERAL OR -
             VARIOUS OR DIFFERENT OR ASSORTED)(5N)(PRODUCT OR PRODUCTS OR -
             ITEM OR ITEMS OR ARTICLE OR ARTICLES OR OBJECT OR OBJECTS OR -
             MERCHANDISE OR GOODS OR WARES)
S3      18658   (DEMAND OR DEMANDS OR NEED OR NEEDS)(5N)(UNCERTAIN? OR UNK-
             NOWN OR UNCLEAR OR UNDETERMINED OR "NOT"()(CERTAIN OR CLEAR OR
              KNOWN OR DETERMINED) OR VAGUE)
S4   14293588   TIME OR TIMES OR PERIOD OR PERIODS OR STAGE OR STAGES OR I-
             NTERVAL OR INTERVALS
S5   10110477   PRICE OR PRICES OR CLASS OR CLASSES OR GROUP OR GROUPS OR -
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            FAMILY OR FAMILIES OR CATEGORY OR CATEGORIES
S6     140497   (EXCEED? OR SURPASS? OR PASS? OR (GO OR GOING OR GOES OR W-
            ENT)()(OVER OR ABOVE OR BEYOND))(10N)(ALLOCATION OR ALLOCATIO-
            NS OR VOLUME OR VOLUMES OR QUANTITY OR QUANTITIES OR AMOUNT OR
             AMOUNTS OR NUMBER OR NUMBERS OR DISTRIBUTION OR DISTRIBUTIONS
             OR INVENTORY OR INVENTORIES)
S7    7484813   STOCHASTIC? OR RANDOM? OR PROBAB? OR VARIAB? OR UNCERTAIN?
            OR LIKELIHOOD?
S8     209640   (MAXIMIZ? OR MAXIMIS? OR INCREAS? OR BUILD?)(10N)(REVENUE?
            OR INCOME? OR RETURN OR RETURNS OR PROFIT OR PROFITS)
S9     479116   (BID OR BIDS OR OFFER OR OFFERS OR ORDER OR ORDERS OR REQU-
            EST OR REQUESTS)(5N)(ACCEPT? OR RECEIV? OR TAKE? OR TAKING)
S10         0   AU=( KALAGNANM J? OR KALAGNANM, J? OR KALAGNANM (2N)(J OR -
            JAYANT))
S11       150   AU=( KALAGNANAM J? OR KALAGNANAM, J? OR KALAGNANAM (2N)(J -
            OR JAYANT))
S12       457   AU=( MOHANTY M? OR MOHANTY, M? OR MOHANTY (2N)(M OR MONALI-
            SA))
S13        46   AU=( PARIJA G? OR PARIJA, G? OR PARIJA (2N)(G OR GYANA))
S14       653   S11 OR S12 OR S13
S15        80   S14 AND (S1 OR S7)
S16         1   S14 AND S1 AND S7
S17         0   S14 AND S3 AND S9
S18         0   S14 AND S1 AND S8
S19        32   S14 AND OPTIM? AND S7
S20        13   RD  (unique items)
S21   4263892   OPTIM? OR MAXIMIZ? OR MAXIMIS?
S22      5982   S21 AND S3
S23      3065   S22 AND S4
S24        16   S23 AND S6 AND S7
S25      2921   S23 AND (S6 OR S7)
S26        42   S25 AND S9
S27        53   S1 AND S2 AND S3
S28        53   S27 AND (S4:S9)
S29       156   S3 AND S9
S30       140   S29 AND (S7 OR S21)
S31        87   S30 AND S4
S32        39   S31 AND (S2 OR S5)
S33       130   S24 OR S26 OR S28 OR S32
S34        67   S33 NOT S33/2004:2010
S35        34   RD  (unique items)


35/5/1     (Item 1 from file: 35)
DIALOG(R)File  35:Dissertation Abs Online
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01872718  ORDER NO: AADAA-I3041577
Issues regarding the timing of order quantity commitments in a dynamic
information supply chain
  Author:  Ferguson, Mark Eugene
  Degree:  Ph.D.
  Year:    2001
  Corporate Source/Institution:  Duke University (0066)
  Supervisor:  Paul H. Zipkin
  Source:  VOLUME 63/02-A OF DISSERTATION ABSTRACTS INTERNATIONAL.
           PAGE 660.  121 PAGES
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Descriptors: BUSINESS ADMINISTRATION, MANAGEMENT
Descriptor Codes: 0454
ISBN: 0-493-54856-4

Consider a manufacturing firm facing uncertain demand for its product. The firm's product consists of components provided by an upstream supplier. Both the manufacturing firm and its supplier incur positive production lead-times. Uncertainty over end-product demand may be reduced or eliminated as the end product draws closer to completion. An early quantity commitment, from the manufacturer to the supplier, ensures the manufacturer of its requested supply but handicaps its ability to react to any demand uncertainty reduction that may occur. By delaying its quantity commitment until after the supplier produces, the manufacturer gains flexibility to respond to better information about demand. Flexibility, however, comes at a price, as the manufacturer is no longer ensured of receiving its total order quantity from the supplier. The purpose of this research is to provide intuition to a manufacturing firm facing this dilemma.

We model supply chain performance using expected profits as the performance metric. The decision variables include the exchange price between the supplier and the manufacturer, the production quantities for both firms, and the manufacturer's order quantity from the supplier. We compare the expected profits of both firms under an early commitment by the manufacturer with those under a delayed commitment. To capture a wider range of industrial settings, we perform our analysis under four different supply-chain power structures; the manufacturer as the price setter, the supplier as the price setter, equal power, and an exchange price that is considered exogenous to the model.

We model information updating through the incorporation of two scenarios. The second chapter models variance reduction of the demand distribution through the use of Bayesian updating on its mean. This model allows the demand distribution variance to be reduced by a factor of zero to one hundred percent, but assumes that both firms know the amount of variance reduction before the information arrives. The third chapter allows for uncertainty over the information type, but limits the types to a reduction in the variance of either zero or one hundred percent. Chapters four and five extend our model to the cases of multiple suppliers and multiple selling seasons.

Casual observation indicates that most manufacturers prefer to delay commitments as long as possible while suppliers prefer early commitments. We investigate whether this goal is always in the manufacturer's best interest. In particular, we find that the manufacturer may sometimes be better off with a contract that requires an <italic>early</italic> commitment to its order quantity, <italic>before</italic> the supplier commits resources and the supplier may sometimes be better off with a <italic>delayed</italic> commitment. We also find that the preferred commitment time frame depends upon which member of the supply chain has the power to set their exchange price.

By extending our model to include multiple suppliers, we find that overall supply chain performance is unaffected under early commitment but under delayed commitment, performance is constrained by the supplier with the lowest margin. Including multiple selling seasons where unmet demand is backordered and a myopic policy is used results in similar commitment time preferences when the firms' holding and backorder costs are proportional to their production costs and margins.

35/5/2 (Item 2 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01855513 ORDER NO: AADAA-I3028533
Topics in inventory control and management
Author: Hu, Haichao
Degree: Ph.D.
Year: 2001
Corporate Source/Institution: Columbia University (0054)
Adviser: Guillermo Gallego
Source: VOLUME 62/10-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 4717. 125 PAGES
Descriptors: ENGINEERING, INDUSTRIAL ; OPERATIONS RESEARCH
Descriptor Codes: 0546; 0796
ISBN: 0-493-40619-0

The focus of this thesis is on two fundamental issues in inventory management and control, when to place an order and how much to order. Decisions involving these two issues become complicated when demand is uncertain, and the need to trade off various costs is considered. We study three topics in detail and focus on the structural results, in particular on the structures of optimal policies.

First, we consider a periodic review, single product, single location, finite horizon stochastic inventory model with lost sales and zero lead times. At the beginning of each period the inventory manager decides how many units to purchase at a fixed plus variable ordering cost. During the period, the inventory manager has the discretion of rejecting demands even if there is sufficient on-hand inventory. This allows him/her to keep inventory for future periods. At the end of each period, the inventory manager has the option of placing emergency orders, at a fixed plus variable cost, to satisfy shortages at the end of each period. The objective is to maximize the expected profit which is equal to the expected revenue from sales minus the expected holding and ordering costs. Under mild conditions on the cost structure, we show that (<italic>s, S</italic>) policies remain optimal in this setting. In addition, we show that a base-stock policy is optimal when both the regular and the emergency setup costs are zero. We also show that emergency orders are never placed if the emergency variable cost is higher than the selling price, and that emergency orders are placed only when the number of units short exceeds a threshold level. Extensive numerical studies are conducted to gain managerial insights and to learn how the optimal policy and the value function behave as the planning horizon grows.

In studying stochastic dynamic programming models, very often one important and interesting topic is the infinite horizon problem. We study the discretionary sale and emergency order infinite horizon problem under both discounted and average cost criteria. Our objective is same as that of the finite horizon problem, i.e., to maximize the total expected profit which is equal to the expected revenue from sales minus the expected holding and ordering costs under both discounted cost criterion and average cost criterion. We prove that the (<italic>s, S</italic>) policies are optimal for both criteria. In addition, we show that a myopic policy is optimal when both the regular and the emergency setup costs are zero under the discounted cost criterion.

Our third topic is a production/inventory problem with finite capacity. In many production/inventory systems, not only is the production/inventory capacity finite, but the systems are also subject to

random production yields that are influenced by factors such as breakdowns, repairs, maintenance, learning, and the introduction of new technologies. The influence of these factors on random yields can be effectively modeled by a Markov chain driven process. We study a single-item, single-location, periodic-review model with finite capacity and Markov modulated demand and supply processes. When demand and supply processes are driven by two independent, discrete-time, finite-state, time-homogeneous Markov chains, we show that a modified, state-dependent, inflated base-stock policy is optimal for both the finite and infinite horizon planning problems. We also show that the finite-horizon solution converges to the infinite-horizon solution.

35/5/3 (Item 3 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01668660 ORDER NO: AAD99-04167
DYNAMIC RE-CONFIGURATION ALGORITHMS FOR WIRELESS COMMUNICATION NETWORKS (DYNAMIC CHANNEL ASSIGNMENT)
Author: EGNER, WILBUR A.
Degree: PH.D.
Year: 1998
Corporate Source/Institution: THE UNIVERSITY OF TEXAS AT ARLINGTON (2502)
Supervisor: VASANT K. PRABHU
Source: VOLUME 59/09-B OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 4993. 158 PAGES
Descriptors: ENGINEERING, ELECTRONICS AND ELECTRICAL ; COMPUTER SCIENCE
Descriptor Codes: 0544; 0984

Mobility of the wireless users creates uncertainty in demand and may lead to non-optimum use of radio network resources. Current wireless networks are reconfigured periodically by manual methods to improve network performance. These network reconfiguration and performance optimizations consume thousands of engineering hours and often are done by trial and error, resulting in less than optimum performance. The rate of network reconfiguration will increase as competitive forces throughout the world cause the service provider to change pricing structures dynamically to attract new customers, while maintaining existing customers. These changes will drastically impact the network usage. This uncertainty further reduces the period of time a non-dynamically tuned network will perform optimally. Therefore, the need to allocate the network and radio resources on the fly to maximize network infrastructure usage and minimize network costs is becoming increasingly important. This dissertation proposes a new method to allocate radio resources and evaluates the performance impact of this scheme using the configuration and operational measurements of traffic demand over a period of several days.

In the 1970s, D.C. Cox and D.O. Reudink proposed and analyzed Dynamic Channel Assignment (DCA) algorithms as a way to increase channel utilization. The algorithms attempted to maximize channel utilization under the radio channel reuse constraint by a fixed D/R. Many researchers believed that centralized-DCA approaches are extremely complex and difficult to undertake in real-time. Most DCA schemes allocate channels on an instantaneous need basis. Therefore, most of these DCA approaches lack a network-wide view of radio interference and produce limited radio performance gains.

Unlike other DCA algorithms, this research will use a centralized-DCA scheme. Due to the complexity in instantaneous DCA, we propose that an interval based DCA algorithm be used. We define a network-wide deployment model to estimate the two-way interference for candidate radio configurations. This DCA approach takes advantage of the spatial-temporal variances in the wireless networks. Each cell's channel requirements are computed based on an interval-demand estimate. Our results have demonstrated a 10-20% reduction in total allocated channels when the enhanced dynamic radio system is implemented instead of a conventional Fixed Channel Allocation (FCA). We use a two-pass approach to minimize the global interference per unit of traffic. The first pass algorithm selects radio channels which minimize potential interference. The second pass algorithm reduces the global I/C metric by reassigning radio channels. We evaluate the performance of two different channel reassignment algorithms, Cell Level Radio Tuning Algorithm (CLRTA) and Gradient Descent Algorithm (GDA). The GDA is shown to have superior performance to that of the CLRTA by approximately 2-4 dB depending on the number of available radio channels. The centralized DCA approach is approximately 3-5 dB better than the conventional FCA scheme.

35/5/4 (Item 4 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01658078 ORDER NO: AAD98-40525
PRICING AND CAPACITY DECISIONS UNDER DEMAND UNCERTAINTY
Author: DROGOSZ, JOHN DENIS FRANK
Degree: PH.D.
Year: 1998
Corporate Source/Institution: THE UNIVERSITY OF MICHIGAN (0127)
Co-chairs: JOHN R. BIRGE; IZAK DUENYAS
Source: VOLUME 59/07-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 3633. 104 PAGES
Descriptors: ENGINEERING, INDUSTRIAL ; ENGINEERING, SYSTEM SCIENCE ; BUSINESS ADMINISTRATION, MANAGEMENT
Descriptor Codes: 0546; 0790; 0454

Consider a firm that has the flexibility to produce two substitutable products and must determine optimal capacity levels and prices for these products for a single-period problem. In the first case, the firm is a price taker but can determine optimal capacity levels for both products. For the second case, the firm can set the price for one product and the optimal capacity level for the other product. In the third case the capacity for both products is assumed to be fixed and the optimal pricing policy for both products is discussed. For each of these cases, the sensitivity of optimal prices and/or capacities to the problem parameters are presented for the case where both products' demands are uniformly distributed. Finally, the situation where each product is managed by a different manager trying to maximize individual product profits are analyzed. The individual optimal price and capacity decisions are then compared to the cases where the decisions are made simultaneously.

Secondly, the case where a firm that is able to simultaneously set the price and capacity level of a single product in each period is considered. The demand for the product is uncertain but its mean demand is dependent on the price level that is set which in turn affects the capacity decision. The optimal pricing and capacity

policy in the case where the functions to buy and sell capacity are linear is presented. A sensitivity analysis of the optimal policy to changes in the parameters of the model is presented for the case where the product's demand is uniformly distributed. The effects of deterministic and stochastic lead times on the optimal policy are also presented. In addition, the situation where there is a possibility of a change in technology that reduces the cost of buying capacity in the future is discussed in terms of its effect on the optimal pricing and capacity strategy. Numerical examples of various optimal pricing and capacity decisions are presented for the case when the cost functions are non-linear.

Thirdly, optimal pricing and capacity decisions are presented for the case where there are fixed costs associated with buying and selling capacity. Sensitivity of the optimal policy to changes in the parameters of the model are also presented.

Finally, optimal capacity decisions are discussed when the future selling price or the production costs are uncertain.

35/5/5 (Item 5 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01533499 ORDER NO: AAD97-09299
PRODUCT AND SERVICE MANAGEMENT: TIMING, PRICING AND EFFORT ALLOCATION
Author: RADAS, SONJA
Degree: PH.D.
Year: 1996
Corporate Source/Institution: UNIVERSITY OF FLORIDA (0070)
Chair: STEVEN M. SHUGAN
Source: VOLUME 57/10-A OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 4455. 166 PAGES
Descriptors: BUSINESS ADMINISTRATION, MARKETING ; BUSINESS ADMINISTRATION, MANAGEMENT
Descriptor Codes: 0338; 0454

The goal of this dissertation is to explore some issues in product and service management. The topic of the first chapter is seasonal marketing and timing of new introductions. This chapter calls attention to the important topic of seasonality and provides a new way of thinking about seasonality. It provides a method for parsimoniously incorporating known seasonality patterns into any dynamic model, without changing the foundation (e.g., parameter interpretation) of the original underlying model and shows how to incorporate seasonality into the popular Bass diffusion model allowing better forecasts. This approach is used to derive managerially useful rules about timing introductions, and to provide an empirical application in the movie industry.

The second chapter focuses on finding optimal pricing strategy for a changing product/service in a marketplace where consumers and firms receive and process information. Consumer learn about products and about firm's policies, firms face uncertain demand that they need to estimate, experience in manufacturing teaches firms how to produce at a lower price, competitive firms gather information about each other, etc. All these exchanges of information have impact on all variables of the marketing mix, among others price. This chapter reviews literature in dynamic pricing which explores how learning of skills or information affects product's price over time.

The last chapter explores how to allocate selling effort when sales representatives handle multiple products. In this chapter effort allocation decision is modeled using a principal agent framework. We provide an explanation for why a full-line strategy is preferred in practice. We consider interdependencies in a salesperson's effort allocations. We attempt to identify the conditions for when a firm should adopt a specific effort allocation strategy so as to provide normative guidelines for managers.

35/5/6 (Item 6 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01485938 ORDER NO: AADAA-I9620484
PRICING AND SEQUENTIAL INTRODUCTION STRATEGY FOR A NEW PRODUCT
Author: HAN, HOON
Degree: PH.D.
Year: 1996
Corporate Source/Institution: STANFORD UNIVERSITY (0212)
Adviser: DONALD A. DUNN
Source: VOLUME 57/02-A OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 794. 136 PAGES
Descriptors: ECONOMICS, FINANCE ; ENGINEERING, INDUSTRIAL
Descriptor Codes: 0508; 0546

A tariff is an algorithm for determining the cost to the customer of consumption of goods. If several tariffs are offered and the customer is allowed to choose the tariff under which its consumption is billed, then the tariffs are called self-selecting. The uncertainty of the new service's demand affects the tariff design and the final demand of the customer. The primary concerns of the pricing problems are the demand uncertainty effect and the characteristics of the self-selecting tariffs.

When the firm has uncertainty about the demand function, that uncertainty affects the design of the tariff. Uncertainty study showed that not all the characteristics of uncertainty are important to the design of the tariff. For example, in uniform tariff a firm should focus its efforts on the improvement of the bias of estimation with respect to maximum demand uncertainty. But a firm should focus its efforts on reducing the uncertainty size with large uncertainty of the maximum willingness-to-pay. And there is a critical level of uncertainty where the pricing behavior of the firm changes. When the uncertainty is low the firm takes a conservative position. The firm designs the optimal tariff to serve for all possible cases. But when the uncertainty is large the firm designs a speculative tariff which serves only large demand cases to extract more profit.

Various multipart tariffs are studied as a tool of profit improvement in the case of imperfectly discriminating heterogeneous customer groups. Higher order multipart tariff always improves the firm's profit, but the improvement of social surplus is not guaranteed. The introduction of a new self-selecting (optional) tariff is one way to serve a new market segment. The Pareto improving optional tariff design method is derived that applies even though a firm has uncertainty about the customer size of the new market segment.

In the sequential introduction problem, not only the heterogeneity but also the size of each customer group is important in choosing the

optimal introduction strategy. But only the heterogeneity of
the customer demand affects the determination of the optimal introduction time.

35/5/7 (Item 7 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
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01459749 ORDER NO: AADAA-I9602914
OPTIMAL MANUFACTURER-RETAILER CONTRACTING UNDER AN UNKNOWN
DEMAND DISTRIBUTION (INVENTORY)
Author: LARIVIERE, MARTIN ANDRE
Degree: PH.D.
Year: 1995
Corporate Source/Institution: STANFORD UNIVERSITY (0212)
Adviser: EVAN L. PORTEUS
Source: VOLUME 56/10-A OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 4028. 105 PAGES
Descriptors: BUSINESS ADMINISTRATION, GENERAL ; ECONOMICS,
COMMERCE-BUSINESS
Descriptor Codes: 0310; 0505

This dissertation considers manufacturer-retailer contracting when the distribution of demand is uncertain. We focus on the relation between the manufacturer's offered terms, the retailer's stocking policy, and the channel's information. Being uncertain of the distribution goes beyond assuming random demand; we assume that neither party knows some parameter of its distribution. They share a common prior on the parameter and update it in a Bayesian fashion. The retailer orders stock before demand is realized, and unmet demand is lost. Sales, not demand, are observed. Consequently, not all observations are equally informative. Demand is observed precisely if inventory remains at the end of the period. A stockout gives only a lower bound on demand. Information acquisition is thus governed by the retailer's inventory policy.

Initially, the manufacturer offers the product at a fixed wholesale price. We determine the retailer's optimal stocking policy, extending the results of Azoury (1985) to the lost sales setting. The retailer stocks above the level that maximizes current period profits. Higher stocking levels make observing exact demand more likely, increasing the rate of information acquisition.

The optimal wholesale price schedule is independent of the market's size. It is driven by the precision of information and the period. The manufacturer could do better with more complicated price schedules but cannot credibly commit to one. The optimal price increases with the precision of information, yielding a counterintuitive implication: The price is higher following a signal of weak demand (product left unsold) than a signal of strong demand (a stockout). Its explanation relates the precision of information to the number of stockouts and the elasticity of retailer orders to the precision of information. Stockouts are less informative, and an uncertain retailer is relatively price sensitive.

We close by allowing the manufacturer to offer a return rate in addition to a wholesale price. She can replicate the outcome of the integrated channel. The manufacturer drives the retailer to indifference and captures all of the increase in channel profits.

35/5/8 (Item 8 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
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01439500 ORDER NO: AADAA-I9533586
PRODUCTION AND SERVICE MANAGEMENT UNDER SETUP TIMES AND UNCERTAINTIES (LOT SCHEDULING)
Author: KATALAN, ZIV Z.
Degree: PH.D.
Year: 1995
Corporate Source/Institution: COLUMBIA UNIVERSITY (0054)
Adviser: AWI FEDERGRUEN
Source: VOLUME 56/06-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 3423. 313 PAGES
Descriptors: OPERATIONS RESEARCH
Descriptor Codes: 0796

Stochastic economic lot scheduling problems involve settings where several items need to be produced in a common facility with limited capacity, under uncertainty regarding demands, production or setup times. These settings characterize typical industrial environments in which a focused factory or work center of limited capacity is dedicated to a group of items.

Our first objective is to develop a broad class of simple, yet effective, production/inventory strategies which are easy to implement, and to derive efficient schemes for their evaluation and optimization. We first address settings with make-to-stock items minimizing long run average costs, possibly subject to service level constraints. The latter include constraints on customer waiting time distributions as well as standard service measures.

The proposed class of strategies are the base-stock policies with inserted idle times: when the facility is assigned to a given item, production continues until either a specific target inventory level is reached or a production batch of specific size, determined upon its initiation, is completed. The items are produced in a given rotation cycle, or an arbitrary periodic sequence allowing certain items to be inserted more frequently than others. Idle times may be inserted between the completion of an item's production batch and the setup for the next item.

The second objective is to extend these methods to hybrid systems with some products made-to-stock, and all others made-to-order. The made-to-order items are not primarily distinguished by the fact that they are supported by zero or small inventories, but rather by the type of priority they are given in the overall production strategy.

The first two objectives address tactical questions for a given design of the system, i.e., a given set of technological specifications (unit production time and setup time distributions; choice of flexible versus dedicated equipment) and marketing choices (product line diversification versus standardization; promised response times).

Our third objective is to address the system design level and marketing-manufacturing interface; in particular the impact of: (a) setup time reductions; (b) product line diversification or standardization; (c) promised response times; (d) the choice of flexible versus dedicated production equipment.

35/5/9 (Item 9 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
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01374643 ORDER NO: AAD94-27487
SOURCING STRATEGY AND MATERIAL CONTROL: AN INTEGRATED MODEL
Author: AGRAWAL, NARENDRA
Degree: PH.D.
Year: 1994
Corporate Source/Institution: UNIVERSITY OF PENNSYLVANIA (0175)
Supervisor: MORRIS A. COHEN
Source: VOLUME 55/05-A OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 1305. 183 PAGES
Descriptors: BUSINESS ADMINISTRATION, GENERAL; BUSINESS ADMINISTRATION, MANAGEMENT; OPERATIONS RESEARCH
Descriptor Codes: 0310; 0454; 0796

This dissertation presents an analytical model that can help derive optimal sourcing strategy alternatives for firms that produce various finished products by assembling them from components which are purchased from external suppliers. A hierarchical, stochastic dynamic programming formulation has been developed to evaluate the impact of given sourcing strategy alternatives on the firm's total operating costs and delivery service levels to customer in an environment of uncertain demand. These alternatives specify the length of contracts, purchase price schedules and delivery lead time schedules for all components. Our analysis can be used to evaluate the tradeoffs between the flexibility of short term, spot market mediated contracts, and the benefits of long term cooperative contracts between buyers and suppliers. Our formulation integrates strategic decisions with respect to selection of supplier contracts, and tactical decisions relating to material control and component allocation. A survey of eight leading manufacturing firms was conducted as part of this research to validate our modeling assumptions, and test the results of our analysis.

In order to understand the impact of strategic sourcing decisions of the firm's tactical decisions, a sub problem formulation of the firm's assembly system has been developed. Consistent with the trend in many industries, commonality of components across different finished products is assumed. Resupply lead times for the different components may be different depending upon the suppliers chosen. The firm is assumed to operate in an environment of demand uncertainty for finished products, though the demands may be correlated within any period. We have studied the tradeoffs between total inventory and shortage costs over all components, and the resulting finished product delivery service metrics such as delays due to component shortages, fill rates and order completion rates. The results are used to determine the optimal order up to levels for components so that target levels of delivery service may be provided. Our results can also be used to study the impact of system parameters such as lead times, holding cost rates and target service levels on total costs.

35/5/11 (Item 11 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01170751 ORDER NO: AAD91-23981
PRODUCTION PLANNING AND CONTROL FOR THE STOCHASTIC ECONOMIC LOT SCHEDULING PROBLEM (SCHEDULING)
Author: BOURLAND, KARLA ELAINE
Degree: PH.D.

Year: 1991
Corporate Source/Institution: THE UNIVERSITY OF MICHIGAN (0127)
Chair: CANDACE YANO
Source: VOLUME 52/03-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 1652. 156 PAGES
Descriptors: ENGINEERING, INDUSTRIAL
Descriptor Codes: 0546

We address the stochastic economic lot scheduling problem (SELSP) and use it as the context for studying planned idle time as a buffer against demand uncertainty and related issues. In the SELSP several different parts are produced, one at a time, on a single machine, and changing from one part to another consumes capacity. Demands are random but must be satisfied on time whenever possible, using overtime if necessary. Long changeover times make frequent changeover in response to uncertainty impractical, and planning for uncertainty desirable. We develop a two-level hierarchical approach--a planning problem and a control problem.

Modeling the major tradeoffs in the SELSP planning problem requires a better understanding of the deterministic-demand version of the problem. We present a formulation that illustrates the relationships among existing solution approaches. We show computationally that one approach gives superior results and gives an improved lower bound on the optimal schedule for a fixed sequence.

In the SELSP, we need a tractable and realistic approach to modeling first-passage-time (or runout-time) distributions in a production setting. We present our method in the context of a continuous-review inventory system where demands are random, and where the lead time can be reduced at a cost. We optimally set the production quantity, reorder point, and lead time.

With this practical approach to modeling first-passage-time distributions, in the SELSP planning problem we simultaneously set the safety stock levels, set the total planned idle time, and allocate it within the schedule. In addition to providing a practical procedure for fixing production targets, we analyze the relative benefit of safety stocks and idle time. We demonstrate (analytically and computationally) that idle time can be a costly alternative to safety stock and discuss the reasons.

We use the results of our planning problem as a production plan, and examine different strategic approaches to the use of planned idle time in the SELSP. We develop and test three control algorithms that also use different elements of the plan to guide decisions about how much to produce and whether to produce on overtime. We show computationally that matching planned inventory levels through time is preferable to the other methods.

35/5/12 (Item 12 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01139039 ORDER NO: AAD91-02768
FUZZY SETS THEORY APPROACH TO AGGREGATE PRODUCTION PLANNING AND INVENTORY CONTROL
Author: LEE, YIH-YUH
Degree: PH.D.
Year: 1990

Corporate Source/Institution: KANSAS STATE UNIVERSITY (0100)
Source: VOLUME 51/08-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 4002. 218 PAGES
Descriptors: ENGINEERING, INDUSTRIAL
Descriptor Codes: 0546

This research investigates potential applications of fuzzy sets theory to aggregate production planning and lot-sizing methods in the material requirements planning environment. The purposes of this research are: (1) To show why fuzzy number representation of the fluctuating demands and resources is a worthwhile modeling technique for the realistic system representation. (2) To model and solve the aggregate production planning problems with fuzzy parameters. (3) To classify the deterministic lot-sizing methods in the literature and modify three widely recognized lot-sizing methods incorporating with the fuzzy demands. (4) To compare three modified lot-sizing methods.

An interactive fuzzy linear programming is proposed to model and solve the single objective aggregate production planning problems. In addition, an interactive fuzzy multiple objective linear programming approach is introduced to deal with the multiple objective aggregate production planning problems. Fuzzy interval values, triangular and trapezoidal fuzzy numbers are used to model the fuzzy goals, resources, and demands. Fuzzy constraints are converted to crisp constraints using the parametric approaches. Each fuzzy equality constraint is transformed into two crisp constraints using the method of parametric programming with upper bounded variables. A fuzzy decision space is the fuzzy set resulting from the intersection of fuzzy goals and fuzzy constraints. The best compromise aggregate production plan is the plan with maximal degree of membership to this set.

Three single-stage lot-sizing methods: Part-Period Balancing, Silver-Meal, and Wagner-Whitin are modified to use uncertain demands in order to determine when and how many to order an end product. Triangular fuzzy numbers are used to represent the fuzzy demands. The comparison of three modified lot-sizing methods is also studied.

The conclusions reached from the results of this research are: (1) The direct use of fuzzy numbers is an efficient way of accounting for imprecision and vagueness in the aggregate production planning and inventory control problems. (2) The proposed interactive approaches are efficient and relatively simple to implement. Fuzzy models are reduced to crisp models which can be solved by standard linear programming softwares. (3) The proposed interactive approaches allow the decision maker to design rather than optimize the best compromise aggregate production plan. (4) Fuzzy sets theory can be incorporated into lot-sizing methods to handle uncertain demands. (5) The modified Part-Period Balancing method may be a better choice overall to determine lot sizes.

35/5/13 (Item 13 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

890152 ORDER NO: AAD85-17320
A DYNAMIC PROGRAMMING APPROACH TO SAFETY STOCK PLANNING IN A MRP CONTEXT (OPERATIONS RESEARCH, STOCHASTIC, MRP)
Author: SRINIVASAN, KRISHNAN
Degree: PH.D.

Year: 1985
Corporate Source/Institution: COLORADO STATE UNIVERSITY (0053)
Source: VOLUME 46/06-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 2022. 125 PAGES
Descriptors: ENGINEERING, INDUSTRIAL
Descriptor Codes: 0546

Material Requirements Planning (MRP) is a production planning and inventory control technique based on a master schedule of forecasted requirements for the finished product. In spite of sophisticated forecasting techniques, no forecast is perfect, and the requirements on the master schedule can not be predicted accurately. The forecast accuracy decreases further in a MRP context, since we need a forecast of the time phased requirements of finished product and not just annual requirements as in a traditional context. Poor forecasts render planning ineffective and in turn lower customer service. Level of customer service will be lower still, when in addition to demand uncertainties, supplies fail to arrive as scheduled. This is a definite possibility in a MRP environment which involves precise coordination of several components and assemblies. To maintain customer service at a decent level without increasing costs unduly in such a context, we need to carry an optimum quantity of safety stock at the end item level.

Several Operations Researchers have studied the safety stock problem in a single period stationary situation which arises in a traditional inventory management context. But, when MRP is in use, we are looking at a multiperiod, stochastic, dynamic situation and virtually no work has been done to arrive at optimal safety stock procurement policies in such an environment. Through this research we try to remove this anomaly.

This research uses a stochastic, dynamic programming approach to formulate the safety stock problem and determine optimal procurement strategies when time phased demand is probabilistic and replenishment lead time is zero, positive or probabilistic. Costs of safety stock policies obtained using the Dynamic Programming (DP) approach and the conventional approach were compared with the help of simulation for different levels of customer service. The DP approach was found to be superior every time. The computational effort required for the DP approach was also minimal which goes to prove beyond doubt that the DP approach may be used with advantage to plan safety stocks in a MRP context.

35/5/14 (Item 14 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

811032 ORDER NO: AAD83-12235
SEQUENTIAL MODELS OF INTERNATIONAL TRADE, BARGAINING, AND INTERTEMPORAL PRICE DISCRIMINATION
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Degree: PH.D.
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Source: VOLUME 44/01-A OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 222. 237 PAGES
Descriptors: BUSINESS ADMINISTRATION
Descriptor Codes: 0310

The first paper of the dissertation proposes a framework for the analysis of optimal strategic reserve policy when the ability to withstand embargoes influences the terms of trade in an exhaustible resource like oil. The model embodies two stylized facts: that competitive forces are not always strong enough to eliminate the possibility that other factors could influence the price of oil, and that futures contracts that are enforceable across national boundaries are not possible. Some of the modeling issues that arise in this context are discussed, and a model of optimal strategic reserve policies is proposed and solved in a leading special case. It is generally optimal for countries to delay extraction, in an intertemporally inefficient way, to preserve bargaining power.

The second paper presents a simple, multi-stage model of bargaining wherein a seller makes an offer that can be either accepted or refused. If rejected, the process continues. How the seller's ability to make commitments affects bargaining outcome is analyzed by comparing the commitment equilibria to those arising when commitment is impossible. The effects of increasing uncertainty about preferences and varying the length of the bargaining horizon are analyzed. The ways in which the bargaining environment can be changed to improve outcomes are discussed.

The third paper of the dissertation presents a two-stage model to explore a monopolist's intertemporal pricing strategies under demand uncertainty. The monopolist has to determine a price of a new durable product under large demand uncertainty. During the introductory period, the seller acquires a better understanding of a product's appeal to its customers. Based on this information, the seller will change prices. There are two distinct types of equilibria, threat equilibria in which the seller refuses to sell with positive probability in the second period, and selling equilibria in which sales are always made in the second period. When these equilibria arise, their properties will be studied.

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DIALOG(R)File 144:Pascal
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16372203 PASCAL No.: 04-0009033
New methodology enhances planning for refined products
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Journal: Hydrocarbon processing : (International ed.), 2003, 82 (10) 81-88 (5 p.)
ISSN: 0018-8190 CODEN: HYPRAX Availability: INIST-6179; 354000113380440060
No. of Refs.: 5 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
A unique analytical tool collectively applies value information from various end-product and intermediate streams and identifies the best profit-making operation.

English Descriptors: Refining; Technicoeconomic study; Economic optimization; Value analysis; Optimal strategy; Profit; Case study; Distillation; Blending; Gasoline; Diesel fuel; Storage capacity; Naphtha; Demand; Uncertainty; Methodology; Simulation

French Descriptors: Raffinage; Etude technicoeconomique; Optimisation economique; Analyse valeur; Strategie optimale; Benefice; Etude cas; Distillation; Coupage; Essence; Carburant diesel; Capacite stockage; Naphta; Demande; Incertitude; Methodologie; Simulation

Classification Codes: 001D06A01C2B; 230

35/5/17 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

16152887 PASCAL No.: 03-0308208
Modeling the flexibility of order quantities and lead-times in supply chains
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Journal: International Journal of Production Economics, 2003, 85 (2) 171-181
ISSN: 0925-5273 CODEN: IJPCEY Availability: INIST-17563
No. of Refs.: 19 Refs.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: Netherlands
Language: English
The underlying assumption of a good supply chain is that buyers and suppliers are willing to accommodate the uncertainties and variations in each other's businesses. We define supply chain flexibility as the robustness of the buyer-supplier relationship under changing supply conditions. This flexibility provides an effective parameter for characterizing the behavior of asynchronous supply chains. A highly flexible relationship is one in which there is little deterioration in the procurement price under different supply conditions. In this paper we introduce a measure for estimating supply chain flexibility as a function of varying order quantities and varying supply lead-times. Our survey indicates that order quantities and supply lead-times are the two most common changes which occur in supply chains, and are most often the cause of buyer-supplier grievance. Since buyers are not always able to predict downstream conditions, they will often issue procurement orders that are for a smaller quantity than normal, and/or shorter supply lead-time than normal. In an inflexible relationship a supplier will only accept these orders at a much higher unit price. Using the proposed model a buyer is able to estimate the flexibility of potential supply chain partners, and hence make a quantifiable choice. The measure itself can be specified in the supply chain contract. Further, in conjunction with a parametric representation of the buyer's procurement behavior, the model is able to estimate the annual procurement cost of a given relationship. (c) 2003 Elsevier Science B.V. All rights reserved.

English Descriptors: Supply chain management; Demand

uncertainty; Theory; Industrial economics; Costs; Contracts;
Simulation; Production control

French Descriptors: Theorie; Economie industrielle; Cout; Contrat;
Simulation; Gestion production

Classification Codes: 001D01A13; 001D00D; 001D00C; 001D01A

35/5/20 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal

15367763 PASCAL No.: 02-0055643
A minimax distribution free procedure for mixed inventory model involving variable lead time with fuzzy demand
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Journal: Computers and Operations Research, 2002, 29 (5) 471-487
ISSN: 0305-0548 Availability: INIST-16412
No. of Refs.: 15 Refs.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United Kingdom
Language: English
In a recent paper, Ouyang and Wu applied the minimax decision approach to solve a continuous review mixed inventory model in which the lead time demand distribution information is unknown but the annual demand is fixed and given. However, in the practical situation, the annual demand probably incurs disturbance due to various uncertainties. In this article, we attempt to modify Ouyang and Wu's model by considering two fuzziness of annual demand (i.e., fuzzy number of annual demand and statistic-fuzzy number of annual demand) and to investigate a computing schema for the continuous review inventory model in the fuzzy sense. We give an algorithm procedure to obtain the optimal ordering strategy for each case. In most of the early literature dealing with inventory problems, either using deterministic or probabilistic models, lead time is viewed as a prescribed constant or a stochastic variable. Recently, some researchers (e.g., Liao and Shyu, Ben-Daya and Raouf, and Ouyang and Wu) incorporated the crashing lead time idea to continuous review inventory models, in which the annual demand is given and fixed. However, in the real situation, the annual demand will probably have a little disturbance due to various uncertainties. The purpose of this article is to modify the Ouyang and Wu's model to accommodate this reality, specifically, we apply the fuzzy set concepts to deal with the uncertain annual demand . We first consider a case where the annual demand is treated as the triangular fuzzy number. Then, we employ the statistical method to construct a confidence interval for the annual demand, and through it to establish the corresponding fuzzy number (namely, the statistic-fuzzy number). For each fuzzy case, we investigate a computing schema for the new model and develop an algorithm to find the optimal ordering strategy. (c) 2001 Elsevier Science Ltd. All rights reserved.

English Descriptors: Mixed inventory model; Theory; Decision theory; Fuzzy

sets; Computational methods; Probabilistic logics; Statistical methods; Algorithms; Mathematical models; Operations research

French Descriptors: Theorie; Theorie decision; Ensemble flou; Methode calcul; Logique probabiliste; Methode statistique; Algorithme; Modele mathematique; Recherche operationnelle

Classification Codes: 001D01A; 001A02; 001A02H02; 001D02A; 001D02B

35/5/21 (Item 6 from file: 144)
DIALOG(R)File 144:Pascal
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14161906 PASCAL No.: 99-0359837
Multi-resource investment strategies : Operational hedging under demand uncertainty
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Journal: European journal of operational research, 1999, 113 (1) 17-29
ISSN: 0377-2217 CODEN: EJORDT Availability: INIST-17566; 354000074531870020
No. of Refs.: 17 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: Netherlands
Language: English
Consider a firm that markets multiple products , each manufactured using several resources representing various types of capital and labor, and a linear production technology. The firm faces uncertain product demand and has the option to dynamically readjust its resource investment levels, thereby changing the capacities of its linear manufacturing process. The cost to adjust a resource level either up or down is assumed to be linear. The model developed here explicitly incorporates both capacity investment decisions and production decisions, and is general enough to include reversible and irreversible investment. The product demand vectors for successive periods are assumed to be independent and identically distributed. The optimal investment strategy is determined with a multi-dimensional news-vendor model using demand distributions, a technology matrix, prices (product contribution margins), and marginal investment costs. Our analysis highlights an important conceptual distinction between deterministic and stochastic environments: the optimal investment strategy in our stochastic model typically involves some degree of capacity imbalance which can never be optimal when demand is known.

English Descriptors: Strategic planning; Capacity; Investment; Price; Manufacturing process; Stochastic model; Optimal strategy; Uncertainty; Marginal cost; Production process; Demand

French Descriptors: Planification strategique; Capacite; Investissement; Prix; Procede fabrication; Modele stochastique; Strategie optimale; Incertitude; Cout marginal; Processus fabrication; Demande; Operational hedging; Multidimensional newsvendor model

Classification Codes: 001D01A14

35/5/22 (Item 7 from file: 144)
DIALOG(R)File 144:Pascal

14161599 PASCAL No.: 99-0359518
Evaluation of three production planning procedures for the use of recipe flexibility
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Journal: European journal of operational research, 1999, 115 (1) 179-194
ISSN: 0377-2217 CODEN: EJORDT Availability: INIST-17566; 354000083339580120
No. of Refs.: 13 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: Netherlands
Language: English
Process industries often obtain their raw materials from mining or agricultural industries. These raw materials usually have variations in quality, which often lead to variations in the recipes used for manufacturing a product. Another reason for varying the recipe is to minimize production costs by using the cheapest materials that still lead to a satisfactory quality in the product. A third reason for using recipe flexibility is that it may occur that at the time of production not all materials for the standard recipe are available. In earlier research we showed under what conditions the use of this type of recipe flexibility should be preferred to the use of high materials stock to avoid materials shortages. We also showed that the use of recipe flexibility to account for material shortages can be justified if the material replenishment leadtime is long, the demand uncertainty is high and the required service level is high. In this paper we assume that these conditions are satisfied and we investigate three different production planning procedures that make use of recipe flexibility to cope with the uncertainty in demand and supply. We assume that the customer order leadtime is much smaller than the material replenishment leadtime, and therefore demand uncertainty is high. The optimal procedure optimizes material use over a planning horizon equal to the material replenishment leadtime, taking into account the customers orders and knowledge of the distribution function of future demand. The deterministic procedure also optimizes the material use over the material replenishment leadtime, but it assumes a deterministic demand level for unknown orders. The simplest, myopic procedure optimizes material use over only the accepted customer orders . These three procedures are investigated via an experimental design of computer simulations of an elementary small scale model of the production planning situation. The results show that the optimal procedure out-performs the other two procedures. Furthermore, for a realistic cost structure in feed industry under certain circumstances the use of the optimal procedure may lead to a 4% increase in profit. However, this improvement must be weighted against the cost incurred by the operational use of this complex procedure. Based on these considerations and the numerical results in this paper, we may expect that for some situations in practice the use of the simplest myopic procedure,

optimizing material use only over the available customer orders, will be justified from an overall cost point of view.

English Descriptors: Optimization; Production process; Production planning; Simulation; Inventory; Performance; Optimal planning

French Descriptors: Optimisation; Processus fabrication; Planification production; Simulation; Inventaire; Performance; Planification optimale; Recipe flexibility

Classification Codes: 001D01A13; 001D01A11

35/5/26 (Item 11 from file: 144)

DIALOG(R)File 144:Pascal

12748602 PASCAL No.: 96-0461929

The stochastic Economic Lot Scheduling Problem : Cyclical base-stock policies with idle times

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Journal: Management science, 1996, 42 (6) 783-796

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No. of Refs.: 1 p.1/4

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English

In this paper we discuss stochastic Economic Lot Scheduling Problems (ELSP), i.e., settings where several items need to be produced in a common facility with limited capacity, under significant uncertainty regarding demands, production times, setup times, or combinations thereof. We propose a class of production/ inventory strategies for stochastic ELSPs and describe how a strategy which minimizes holding, backlogging, and setup costs within this class can be effectively determined and evaluated. The proposed class of strategies is simple but rich and effective: when the facility is assigned to a given item, production continues until either a specific target inventory level is reached or a specific production batch has been completed; the different items are produced in a given sequence or rotation cycle, possibly with idle times inserted between the completion of an item's production batch and the setup for the next item. An optimal strategy within the class can be determined, and all relevant performance measures can be evaluated in just a few CPU seconds, using a 486-based PC. We also derive a number of easily computable lower bounds for the optimal cost value and establish a comparison with deterministic ELSPs.

English Descriptors: Scheduling; Inventory control; Production system; Stochastic method; Demand; Minimization; Optimal strategy; Sensitivity analysis; Cost analysis; Economic order quantity

French Descriptors: Ordonnancement; Gestion stock; Systeme production;

Methode stochastique; Demande; Minimisation; Strategie optimale; Analyse sensibilite; Analyse cout; Quantite economique a commander

Classification Codes: 001D01A12

35/5/27 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

08794723
Title: Two-stage simulation optimization for agile manufacturing capacity planning
Author(s): Uribe, A.M.; Cochran, J.K.; Shunk, D.L.
Author Affiliation: Ind. & Syst. Eng. Dept., ITESM, Mexico City, Mexico
Journal: International Journal of Production Research, vol.41, no.6, pp. 1181-97
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Item Identifier (DOI): http://dx.doi.org/10.1080/00207540210163928
Language: English
Document Type: Journal Paper (JP)
Treatment: Practical (P); Theoretical or Mathematical (T)
Abstract: Capacity planning involves the selection of manufacturing technologies and the allocation of budget to specific equipment acquisitions. In today's highly volatile manufacturing world, an agile capacity-planning tool is required. This tool must provide the mechanism for a company to thrive in an environment of uncertainty. Uncertain future demands make capacity planning and technology selection difficult tasks, whether they are caused by variations in forecasts of direct demand or by upstream variability in a supply chain. In this paper, a practical modelling technique for minimizing the required investment in capacity planning for discrete manufacturing sites under an uncertain demand stream is presented. The method consists of a two-stage stochastic integer program. The first stage characterizes the optimal response of the system under uncertainty. The second stage selects a tool set based on the characterization from the first stage, with the addition of budget constraints. The model is scalable, allowing for multiple products, multiple operations, multiple flow paths including re-entrant flow, and multiple tool types. A simple example is introduced to explain the methodology, followed by the results of a large-scale real-world application in the semiconductor industry (21 refs.)
Subfile(s): B (Electrical & Electronic Engineering); C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: agile manufacturing; capacity planning (manufacturing); integer programming; minimisation; stochastic programming; supply chain management
Identifiers: two-stage simulation optimization; agile manufacturing capacity planning; discrete manufacturing sites; uncertain demand stream; two-stage stochastic integer program; technology selection; multiple products; multiple

operations; multiple flow paths; reentrant flow; multiple tool types; semiconductor industry
Classification Codes: B0170 (Project and production engineering); B0260 (Optimisation techniques); B0140B (Planning); C1290F (Systems theory applications in industry); C1180 (Optimisation techniques); E1010 (Production management); E0210G (Optimisation); E1510 (Manufacturing systems)
INSPEC Update Issue: 2003-047

35/5/28 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

08475882
Title: Channel strategies and stocking policies in uncapacitated and capacitated supply chains
Author(s): Mahajan, J.; Radas, S.; Vakharia, A.J.
Author Affiliation: Dept. of Marketing, Florida Univ., Gainesville, FL, USA
Journal: Decision Sciences, vol.33, no.2, pp.191-222
Publisher: Decision Sci. Inst
Country of Publication: USA
Publication Date: Spring 2002
ISSN: 0011-7315
SICI: 0011-7315(200221)33:2L.191:CSSP;1-Y
CODEN: DESCDQ
Language: English
Document Type: Journal Paper (JP)
Treatment: Theoretical or Mathematical (T)
Abstract: A supply chain consisting of a single supplier distributing two independent products through multiple retailers is analyzed in this paper. The supplier needs to incentivize its retailers to adopt stocking policies that are mutually advantageous and that result in the optimal level of market coverage. The focus is on determining the optimal stocking policies for retailers and the resulting distribution strategy given that the supplier has either unlimited or limited capacity. The results provide insights on the optimal distribution strategy and stocking policies for the supply chain. In general, the paper shows that it is optimal for the supplier to use an intensive distribution strategy (i.e., the products are stocked by all retailers). Selective or exclusive strategies are optimal only when retailers are risk averse, stocking synergies exist, and there are differences in demand or supply uncertainties across products. The analysis also shows that retailers hold larger stocks of a product which generates higher supplier margins but only when the supplier has unlimited capacity. If the supplier has limited capacity, then their margins have no effect on retailers' stocking decisions. Contrary to conventional wisdom, retailers hold larger stocks of a product that has less demand uncertainty as compared to one that has more demand uncertainty
Subfile(s): C (Computing & Control Engineering); E (Mechanical & Production Engineering)
Descriptors: optimisation; stock control
Identifiers: channel strategies; stocking policies; uncapacitated supply chains; capacitated supply chains; multiple retailers; mutually advantageous stocking policies; optimal market coverage; unlimited

capacity; limited capacity; intensive distribution strategy; selective strategies; exclusive strategies; risk averse retailers; stocking synergies; uncertainties
Classification Codes: C1290F (Systems theory applications in industry); C1180 (Optimisation techniques); E0210G (Optimisation); E1010 (Production management); E1540 (Systems theory applications)
INSPEC Update Issue: 2002-050

35/5/31 (Item 2 from file: 6)
DIALOG(R)File 6:NTIS

0220696 NTIS Accession Number: AD-703 083/XAB
Optimal Policies under the Shortage Probability Criterion for an Inventory Model with Unknown Dependent Demands
Iglehart, D. L. ; Jaquette, S. C.
Stanford Univ Calif
Corp. Source Codes: 332550
1969 10p
Document Type: Journal article
Journal Announcement: USGRDR7010
Prepared in cooperation with DECISION Studies Group.
Pub. in Naval Research Logistics Quarterly, v16 n4 p485-493 Dec 69.
NTIS Prices: Not available NTIS
Contract No.: NONR-4457(00); NR-347-001
The principal innovation in this paper is the consideration of a new objective function for inventory models which shall be called the shortage probability criterion. Under this criterion one seeks to minimize the total expected discounted cost of ordering subject to the probability that the stock level at the end of the period being less than some fixed quantity not exceed some prescribed number. For three different models it is shown that the minimum order policy is optimal . This result is then applied to a particular inventory model in which the demand distribution is not completely known. A Bayesian procedure is discussed for obtaining optimal policies. (Author)
Descriptors: *Inventory control; Mathematical models; Stock level control ; Decision theory; Management planning; Probability; Optimization; Theorems; Reprints
Identifiers: Bayesian estimation
Section Headings: 74E (Military Sciences--Logistics, Military Facilities, and Supplies); 72E (Mathematical Sciences--Operations Research)

35/5/32 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

1771556 Genuine Article#: 694GV Number of References: 27
Title: Temporal decomposition scheme for nonlinear multisite production planning and distribution models
Author: Jackson JR; Grossmann IE (REPRINT)
Corporate Source: Carnegie Mellon Univ,Dept Chem Engn,Pittsburgh//PA/15213 (REPRINT); Carnegie Mellon Univ,Dept Chem Engn,Pittsburgh//PA/15213
Journal: INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, 2003, V42, N13 (JUN 25), P3045-3055
ISSN: 0888-5885 Publication Date: 20030625

Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036 USA
Language: English Document Type: ARTICLE
Geographic Location: USA
Journal Subject Category: ENGINEERING, CHEMICAL
Abstract: In this paper we propose a multiperiod nonlinear programming model for the production planning and product distribution of several continuous multiproduct plants that are located in different sites and supply different markets. The unique feature of the proposed model is that each plant is represented through nonlinear process models. To solve the resulting large-scale model, we present two solution techniques based on Lagrangean decomposition. Spatial decomposition is based on the idea of dualizing interconnection constraints between the plants and markets in order to be able to optimize each site and market individually. For the temporal decomposition, the interconnection constraints are defined between each time period through the inventory variables so that the entire production and distribution plan can be optimized independently in each time period. It is shown that the proposed decomposition methods yield significant computational savings, and temporal decomposition is shown to be the superior decomposition approach in terms of faster computational times and tighter bounds to the optimal solutions.
Identifiers: KeyWord Plus(R): DEMAND UNCERTAINTY; TIMING PROBLEM; OPTIMIZATION; PLANT
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35/5/33 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

10750410 Genuine Article#: 563RW Number of References: 23
Title: Inventory models with random yield in a random environment
Author: Erdem AS (REPRINT) ; Ozekici S
Corporate Source: Bogazici Univ,Dept Management Informat Syst,TR-80815 Bebek//Turkey/ (REPRINT); Bogazici Univ,Dept Management Informat Syst,TR-80815 Bebek//Turkey/; Bogazici Univ,Dept Ind Engn,TR-80815 Bebek//Turkey/
Journal: INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS, 2002, V78, N3,SI (AUG 11), P239-253
ISSN: 0925-5273 Publication Date: 20020811
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE
Geographic Location: Turkey
Journal Subject Category: ENGINEERING, MULTIDISCIPLINARY; ENGINEERING, MANUFACTURING
Abstract: We consider a single item inventory model which is observed periodically in a randomly changing environment. All model parameters are specified by the state of the environment which is assumed to be a time-homogeneous Markov chain. Yield is random due to the random capacity of the vendor, i.e., a given order is fully received if the order quantity is less than this capacity. Otherwise, the quantity received is equal to the available capacity. The problem is analyzed in single, multiple and infinite periods and it is shown that in all cases, the optimal policy is the well-known base-stock policy where the optimal order-up-to level depends on the state of the environment. The results are compared with the solutions of the certain yield model when there is infinite capacity. We show that the order-up-to levels are equal in the single period case. However, in multiple and infinite periods, we order the same or more if the yield is random. (C) 2002 Elsevier Science B.V. All rights reserved.
Descriptors: SCI Author Keywords: random yield ; random capacity ; random environment ; base-stock
Identifiers: KeyWord Plus(R): SUPPLY UNCERTAINTY; CAPACITY; POLICIES; DEMAND; DIVERSIFICATION
Cited References:
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35/5/34 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2010 The Thomson Corp. All rts. reserv.
10336189 Genuine Article#: 513PA Number of References: 42
Title: Near-optimal pricing and replenishment strategies for a retail/distribution system
Author: Chen FR (REPRINT) ; Federgruen A; Zheng YS
Corporate Source: Columbia Univ,Grad Sch Business,New York//NY/10027 (REPRINT); Columbia Univ,Grad Sch Business,New York//NY/10027; Univ Penn,Wharton Sch,Philadelphia//PA/19104
Journal: OPERATIONS RESEARCH, 2001, V49, N6 (NOV-DEC), P839-853
ISSN: 0030-364X Publication Date: 20011100
Publisher: INST OPERATIONS RESEARCH MANAGEMENT SCIENCES, 901 ELKRIDGE LANDING RD, STE 400, LINTHICUM HTS, MD 21090-2909 USA
Language: English Document Type: ARTICLE
Geographic Location: USA
Journal Subject Category: OPERATIONS RESEARCH & MANAGEMENT SCIENCE
Abstract: This paper integrates pricing and replenishment decisions for the following prototypical two-echelon distribution system with deterministic demands. A supplier distributes a single product to multiple retailers, who in turn sell it to consumers. The retailers serve geographically dispersed, heterogeneous markets. The demand in each retail market arrives continuously at a constant rate, which is a general decreasing function of the retail price in the market. The supplier replenishes its inventory through orders (purchases, production runs) from a source with ample capacity. The retailers replenish their inventories from the supplier. We develop efficient algorithms to determine optimal pricing and replenishment strategies for the following three channel structures. The first is the vertically integrated channel, where the system-wide pricing and replenishment strategies are determined by a central planner whose objective is to maximize the system-wide profits. The second structure is that of a vertically integrated channel in which pricing and operational decisions are made sequentially by separate functional departments. The third channel structure is decentralized, i.e., the supplier and the retailers are independent, profit-maximizing firms with the supplier acting as a Stackelberg game leader. We apply our algorithms to a set of numerical examples to quantify the supply chain inefficiencies due to functional segregation or uncoordinated decision making in a decentralized channel. We also gain insight into systematic differences in the associated pricing and operational patterns.
Identifiers: KeyWord Plus(R): JOINT SETUP COSTS; POWER-OF-2 POLICIES; DEMAND; UNCERTAINTY; PROFITS; MODEL
Cited References:
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B. NPL Files, Full-text

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              OGRAMMES OR SCHEME OR SCHEMES OR STRATEGY OR STRATEGIES)
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              JECTS OR MERCHANDISE OR GOODS OR WARES)
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              ENT)()(OVER OR ABOVE OR BEYOND))(10N)(ALLOCATION OR ALLOCATIO-
              NS OR VOLUME OR VOLUMES OR QUANTITY OR QUANTITIES OR AMOUNT OR
               AMOUNTS OR NUMBER OR NUMBERS OR DISTRIBUTION OR DISTRIBUTIONS
               OR INVENTORY OR INVENTORIES)
S7   15844943   STOCHASTIC? OR RANDOM? OR PROBAB? OR VARIAB? OR UNCERTAIN?
              OR LIKELIHOOD?
S8    5188949   (MAXIMIZ? OR MAXIMIS? OR INCREAS? OR BUILD?)(10N)(REVENUE?
              OR INCOME? OR RETURN OR RETURNS OR PROFIT OR PROFITS)
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              EST OR REQUESTS)(5N)(ACCEPT? OR RECEIV? OR TAKE? OR TAKING)
S10         0   AU=( KALAGNANM J? OR KALAGNANM, J? OR KALAGNANM (2N)(J OR -
              JAYANT))
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              OR JAYANT))
S12        43   AU=( MOHANTY M? OR MOHANTY, M? OR MOHANTY (2N)(M OR MONALI-
              SA))
S13        10   AU=( PARIJA G? OR PARIJA, G? OR PARIJA (2N)(G OR GYANA))
S14        73   S11 OR S12 OR S13
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S15          1   S14 AND S3
S16         18   S14 AND S7
S17         16   RD  (unique items)
S18         16   S15 OR S17
S19         24   S1(S)S2(S)S3
S20         73   S1(S)S3(S)S8
S21         18   S2(S)S3(S)S4(S)S6
S22        646   S3(S)S9
S23         53   S22(S)S2(S)S4
S24         62   S20(S)(S2 OR S4)
S25        770   S2(S)S3(S)S4(S)(S7 OR S8 OR S9 OR OPTIM?)
S26        758   S2(S)S3(S)S4(S)S7
S27        377   S26(S)S5
S28        206   S27(S)(S8 OR S9)
S29         22   S27(S)S8(S)S9
S30        142   S19 OR S21 OR S23 OR S24 OR S29
S31         26   S30 NOT S30/2004:2010
S32         24   RD  (unique items)


32/3,K/2     (Item 1 from file: 613)
DIALOG(R)File 613:PR Newswire
(c) 2010 PR Newswire Association Inc. All rts. reserv.
00897424  20021203NETU019  (USE FORMAT 7 FOR FULLTEXT)
Optiant Wins INDUSTRYWEEK Technology of the Year Award
PR Newswire
Tuesday, December 3, 2002  11:20 EST
JOURNAL CODE:  PR  LANGUAGE:  ENGLISH  RECORD TYPE:  FULLTEXT
DOCUMENT TYPE:  NEWSWIRE
WORD COUNT: 1,199

TEXT:
...supply
chain design and inventory optimization applications.
    PowerChain is the only customer-proven strategic inventory planning
solution that addresses the dynamic relationships between cost, lead
time, demand variability, supply uncertainty and the integrated
impact on product margins.  By "dollarizing" each element of the supply chain
structure, global stakeholders model what-if scenarios to make critical...

...survive in the most tumultuous business
environment since the stock market crash of 1929.  In 2002 alone,
PowerChain users have saved over $500 million and increased revenue an
average of 5 percent.  This confirms the fundamental value of Optiant's call-to-action
for manufacturers: use inventory strategies to optimize supply
chain performance and reduce costs, while building in the flexibility needed to compete
in an uncertain global economy....


32/3,K/10     (Item 8 from file: 20)
DIALOG(R)File  20:Dialog Global Reporter
(c) 2010 Dialog. All rts. reserv.
28675645  (USE FORMAT 7 OR 9 FOR FULLTEXT)
Q1 2003 CEMEX S.A. Earnings Conference Call - Final - Part 1
FAIR DISCLOSURE WIRE
```

April 01, 2003
JOURNAL CODE: WFDW LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 4731

... in the Cemex system, particularly in the Caribbean and the United States. We see further downside risk to earlier guidance of minus 15% in cement demand as uncertainty continues to permeate the country's politic and economic environment. We will remain focused on reducing cost and expenses to better face declining demand in...end of this quarter. EBITDA dropped 5% from a year ago to $450m and our consolidated EBITDA margin decreased from 30% in the year -- earlier period to 28% in the first quarter of this year. The 2-percentage point drop is attributable to the increased weight of our multi-product and ready mix sales, both of which have lower margins than cement sales. Our first quarter EBITDA benefited from both our cost cutting efforts and...

32/3,K/14 (Item 12 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter
(c) 2010 Dialog. All rts. reserv.
23207516
Demand for L.A.M. IPM Wound Gel(TM) Substantially Exceeding Expectations
CANADA NEWSWIRE
June 06, 2002
JOURNAL CODE: WCNW LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 772

... results and financial condition to differ materially from those anticipated by the forward-looking statements. These risks and uncertainties include, but are not limited to uncertainties relating to the need for additional funds and corporate partners, product liability, dependence on third parties for manufacturing and marketing, the early stage of products being marketed or under development, patent risk and competition. Company Contact: Anthony Vespa Toll Free in N. America (877) LAM-7717 (877) 526...

32/3,K/15 (Item 13 from file: 20)
DIALOG(R)File 20:Dialog Global Reporter
(c) 2010 Dialog. All rts. reserv.
20644585 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Optiant: Manufacturers Will Make 2002 the Year for Optimizing Supply Chain Performance
PR NEWSWIRE
January 08, 2002
JOURNAL CODE: WPRW LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 817

... risks. It also helps dollarize the supply chain-wide impacts of these variables. -- Balance supply and demand while counterbalancing risk. Planning supply chain strategies around demand uncertainty (including forecast error, unexpected spikes/dips in demand) and supply unpredictability (including limited capacity, supplier delays, and critical parts shortages) equips corporations with agile supply...

32/3,K/17 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02520633 258034721
Multi-vendor sourcing in a retail supply chain
Agrawal, Narendra; Smith, Stephen S; Tsay, Andy A
Production & Operations Management v11n2 PP: 157-182 Summer 2002
ISSN: 1059-1478 JRNL CODE: POMS
WORD COUNT: 8005

...TEXT: tested by two major retailers.

(SUPPLY CHAIN MANAGEMENT; CAPACITY PLANNING; VENDOR MANAGEMENT; SOURCING STRATEGY; STOCHASTIC PROGRAMMING)

1. Introduction

We consider the problem of how to optimally plan and execute the sourcing of seasonal and fashion private-label merchandise carried by department stores and specialty retailers. For a given selling season, the sourcing...

...4) adjustments based on subsequent market information. The goal of this paper is to develop a formal planning methodology for this decision problem that accommodates multiple products and multiple suppliers, and explicitly accounts for demand uncertainty and adjustments to the plan during the season....

32/3,K/18 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02406892 149083481
Channel strategies and stocking policies in uncapacitated and capacitated supply chains
Mahajan, Jayashree; Radas, Sonja; Vakharia, Asoo J
Decision Sciences v33n2 PP: 191-222 Spring 2002
ISSN: 0011-7315 JRNL CODE: DSI

ABSTRACT: A supply chain consisting of a single supplier distributing 2 independent products through multiple retailers is analyzed. The supplier needs to incentivize its retailers to adopt stocking policies that are mutually advantageous and that result in the optimal level...

...optimal stocking policies for retailers and the resulting distribution strategy given that the supplier has either unlimited or limited capacity. Results provide insights on the optimal distribution strategy and stocking policies for the supply chain. It is optimal for the supplier to use an intensive distribution strategy. Retailers hold larger stocks of...

...capacity, then their margins have no effect on retailers' stocking decisions. Contrary to conventional wisdom, retailers hold larger stocks of a product that has less demand uncertainty as compared to one that has more demand uncertainty.

32/3,K/19 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01851206 05-02198
Combined pricing and inventory control under uncertainty
Federgruen, Awi; Heching, Aliza
Operations Research v47n3 PP: 454-475 May/Jun 1999
ISSN: 0030-364X JRNL CODE: OPR

ABSTRACT: The simultaneous determination of pricing and inventory replenishment strategies in the face of demand uncertainty is addressed. The following single item, periodic review model is analyzed. Demand in consecutive periods are independent, but their distributions depend on the item's price in accordance with general stochastic demand functions. The price charged in any given period can be specified dynamically as a function of the state of the system. A replenishment order may be placed at the beginning of some or all of the periods. Stockouts are fully backlogged. Both finite and infinite horizon models are addressed, with the objective of maximizing total expected discounted profit or its time average value, assuming that prices can either be adjusted arbitrarily or that they can only be decreased. The structure of an optimal combined pricing and inventory strategy for all of the above types is characterized. An efficient value iteration method is developed to compute these optimal strategies.

32/3,K/20 (Item 4 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01763553 04-14544
Multi-resource investment strategies: Operational hedging under demand uncertainty
Harrison, J Michael; Van Mieghem, Jan A
European Journal of Operational Research v113n1 PP: 17-29 Feb 16, 1999
ISSN: 0377-2217 JRNL CODE: EJO

ABSTRACT: Consider a firm that markets multiple products, each manufactured using several resources representing various types of capital and labor, and a linear production technology. The firm faces uncertain product demand and has the option to dynamically readjust its resource investment levels, thereby changing the capacities of its linear manufacturing process. The cost to adjust a...

...is general enough to include reversible and irreversible investment. The product demand vectors for successive periods are assumed to be independent and identically distributed. The optimal investment strategy is determined with a multi-dimensional news-vendor model using demand distributions, a technology matrix, prices (product contribution margins), and marginal investment costs.

32/3,K/21 (Item 5 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00241800 84-20360
Special Products and Uncertainty in Production/Inventory Systems
Williams, T. M.
European Journal of Operational Research v15n1 PP: 46-54 Jan 1984
ISSN: 0377-2217 JRNL CODE: EJO

...ABSTRACT: analysis. However, simulation studies lack generalizability, and assumptions of deterministic demand and single-item production cannot adequately reflect the complex nature of the interactions between multi-item production and inventory systems. In reality, such systems may face stochastic demand and full-capacity loadings. A queuing-theoretic approach is described for incorporating competition for capacity among products and uncertainties in production and demand into production/inventory system analysis. With this approach, demands for stock of items are seen to form production queues. A simple queuing model is presented to determine: 1. how many products in a one-stage system should be regularly stocked and how many should be made to order, 2. how production capacities should be allocated to each class of products, 3. how much made-to-order business should be accepted, 4. what impacts special business has on the inventory system, and 5. how these impacts can be minimized.

32/3,K/23 (Item 2 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

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The inventory theoretic approach in transportation selection models: a critical review.
Tyworth, John E.
Logistics and Transportation Review, v27, n4, p299(20)
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ISSN: 0047-4991 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
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... orders a replacement quantity from a single supplier having multiple sources (carriers) available to transport the order. No crossover or orders occurs in which an order is not received until after a later issued order has been received. THe supplier may represent (1) a company-owned plant, warehouse, or distribution center, or (2) an independent partner or channel ally. Furthermore, each carrier serving the supplier has a different probabilistic shipping time performance and offers a different schedule of freight rates. The problem is to determine the transportation alternative, the reorder point(s), and the order quantity...